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Ten into Ten

Ten Subjects by Ten Authors

The first book of its kind by the Top Faculties, Authors & Subject Experts.

The Gold Standard Book for

NEET/FMGE/INI-CET/NEXT

Part A

Subjects Covered

- Anatomy
- Pharmacology
- Pathology
- Preventive and Social Medicine (PSM)
- Otolaryngology
- Ophthalmology


Obstetrics & Gynecology


Surgery


Pharmacology


Medicine


Pediatrics


Preventive & Social Medicine


Anatomy


Ophthalmology


Pathology


Otolaryngology


Utsav Bansal


Preeti Sharma


Sudhir Kumar Singh


Rajiv Dhawan

Edited by

Sudhir Kumar Singh

Ten Reasons to Refer to this Book

- **10,000+** MCQs covering 10 Vital Subjects
- Most Recent Qs Covered up to August 2024 (NEET PG 2024 and INI CET May 2024)
- **2000+** Newly-framed Subject-wise Clinical Qs as per the Latest Exam Trends
- All the MCQs Organized with Subject-wise cum Topic-wise Approach
- Complete Question Bank Segregated into Three Parts—Last 5 Years Recall of INI-CET and NEET PG, frequently-asked Qs and Newly-framed Clinical Qs
- Questions with Authentic Answers and References of Standard Textbooks
- Answers Supplemented with Explanations of the Important Qs
- Vital Pedagogical Features Added, like Tables, Figures, Flowcharts, Images, etc.
- Subject-wise Synopsis Covering Important Tables, One Liners at the beginning
- The Only Most Updated Question Bank available for NEET/FMGE/INI-CET/NEXT with Best Online Support for Controversial & Doubtful Qs

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2 VOLUME SET

PART – A

SUBJECTS COVERED

01	**ANATOMY** *Dr Shrikant Verma*	04	**PREVENTIVE AND SOCIAL MEDICINE (PSM)** *Dr Mukhmohit Singh*
02	**PHARMACOLOGY** *Dr Ranjan Kumar Patel*	05	**OTOLARYNGOLOGY** *Dr Rajiv Dhawan*
03	**PATHOLOGY** *Dr Preeti Sharma*	06	**OPHTHALMOLOGY** *Dr Utsav Bansal*

EDITED BY

Dr Sudhir Kumar Singh

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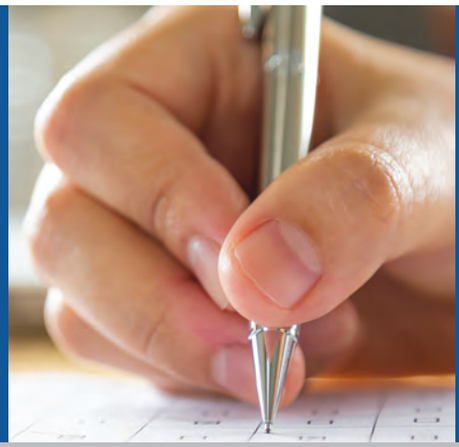
PREFACE



Success is not final; failure is not fatal: it is the courage to continue that counts.
—Winston Churchill

We are immensely pleased to write the Preface to this book which is one of its kind. The idea to introduce this student-friendly and exam-oriented book sprouted after doing intensive market research and interactions with students who encouraged us to bring our nascent idea into a proper shape and today it is in your hand in the form of this illustrious book.

This book is the result of not one or two rather it is the amalgamation of ten medical scholars' experience and knowledge and for this, we all are heartily indebted to CBS Publishers and Distributors who have not only turned our dream into reality but also added another feather to their cap in the form of this charismatic achievement.

Now let us discuss something about this book. As the name suggests, this wonderful and amazingly designed book is meant for NEET/INI-CET/NExT/FMGE aspirants. This meticulously written and sensible arranged book compiles more than 10,000 questions covering 10 subjects. Conceived and formulated by ten distinguished and highly reputed medical scholars, this book covers Multiple Choice Questions extracted from all the sought-after topics with their authentic and to-the-point answers. The icing on the cake is inclusion of duly updated references and one-two liners explanations of the important questions. We have not stopped here but kept adding value to the book by inserting useful tables along with recent advances in the form of brief theory of respective subjects.

Now, let us understand the structure of the book. The overall Question Bank has been divided into three categories:

1. Last Five Years NEET and INI-CET Recall
2. Frequently-asked Questions
3. Newly-created Clinical-based Questions

Keeping this categorization in mind, we are pretty sure that this book will prove a panacea for all the woes of the students. It is the answer of all their queries which had been haunting their minds before the arrival of this book.

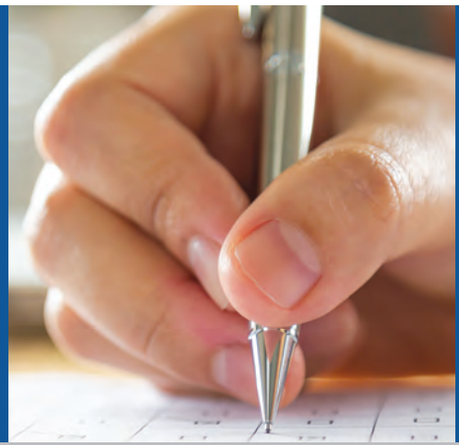
As the motto of this book is: Practice, Practice and Practice, your regular practice and honest efforts will make your dream true and this book is *Brahmashtra* which never misses its target. It will prove your true companion and guide you toward success for sure.

With the hope that this book, which is the outcome of Ten distinguished authors' relentless efforts, will hit the bull's-eye for you, we are wishing best of luck to our students for their future endeavors.

Always remember this: "Believe you can and you're halfway there."

—Authors

Acknowledgments



We express our sincere thanks to The God Almighty, for giving an idea to accomplish this book. We express our heartiest gratitude to our family members for their unconditional support and motivation to fulfil this commitment.

We would like to thank **Mr Satish Kumar Jain** (Chairman) and **Mr Varun Jain** (Managing Director), M/s CBS Publishers and Distributors Pvt Ltd for providing us the platform in bringing out the book. We have no words to describe the role, efforts, inputs and initiatives undertaken by **Mr Bhupesh Aarora**, Sr. Vice President – Publishing and Marketing (Health Sciences Division) for helping and motivating us.

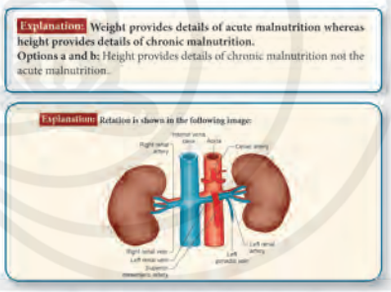
We sincerely thank the entire CBS team for bringing out the book with utmost care and attractive presentation. We would like to thank Ms Nitasha Arora (Assistant General Manager Publishing – PGMEE & Nursing Division), Ms Daljeet Kaur (Assistant Publishing Manager) and Dr Anju Dhir (Sr. Product Manager and Medical Development Editor) for their publishing support. We would also extend our thanks to Mr Shivendu Bhushan Pandey (Sr. Manager and Team Lead), Ms Surbhi Gupta (Sr. English Editor), Mr Ashutosh Pathak (Sr. Proofreader cum Team Coordinator) and all the production team members for devoting laborious hours in designing and typesetting the book.

Special Features of the Book

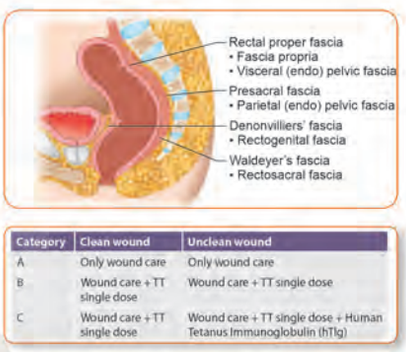
Part A

Sl. no.	Subjects Covered	Synopsis (Pages)	Most Recent Qs (2024)	5 Years Recall Qs	Frequently Asked Qs	New Qs	Total Qs
1.	Anatomy	50	31	146	679	202	1058
2.	Pharmacology	16	41	175	687	149	1052
3.	Pathology	26	55	172	244	455	926
4.	Preventive and Social Medicine (PSM)	18	52	232	660	172	1116
5.	Otolaryngology	20	19	90	605	105	819
6.	Ophthalmology	46	25	112	326	115	578
	Grand Total (Qs)		**223**	**927**	**3201**	**1198**	**5549**

Each subject begins with a concise **Synopsis Highlighting** High-yield Content from an exam perspective.

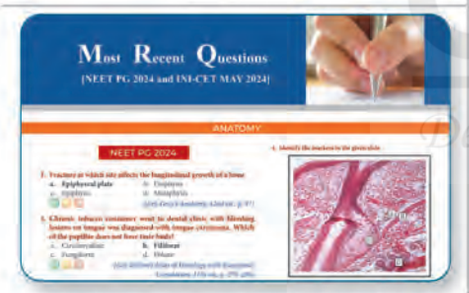


Each question and its answer is accompanied by concise **Explanation** to enhance the clarity of concepts.



Category	Clean wound	Unclean wound
A	Only wound care	Only wound care
B	Wound care + TT single dose	Wound care + TT single dose
C	Wound care + TT single dose	Wound care + TT single dose + Human Tetanus Immunoglobulin (hTIg)

Vital pedagogical aids, including **Flowcharts, Diagrams, Images, Tables** are added for easy memorization and quick revision.

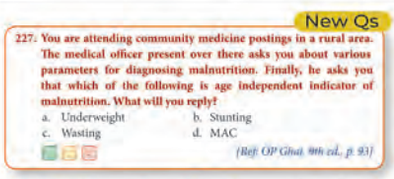


A duly-updated compendium featuring the **Most Recent Questions** up to 2024.

Every question is supplemented with **References** from standard textbooks for authenticity.

A topic-wise **Tracking Scale** is included for self-assessment and further progress.

The question bank includes 10,000+ solved questions, organized subject-wise and topic-wise, segregated into 3 parts: 1. Last 5 years recall, 2. Frequently-asked questions, and 3. Newly-created clinical questions making it a comprehensive tool for exam success.

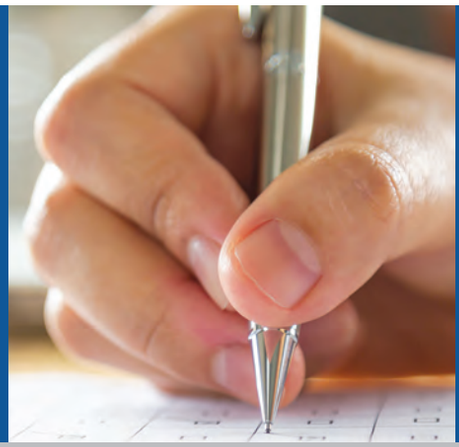


New, subject-wise clinical questions have been added, categorized topic-wise as per the latest exam trends

Supplemented with exam preparation related **Helpful Tips** and **Did You Know facts**.

For controversial questions, an Author Desk support is available to resolve doubts.

From the Publisher's Desk



Dear Students,

Let us begin with a power-packed and inspiring quote:

Arise, awake, and stop not until the goal is achieved.

—Swami Vivekananda

Healthcare is undoubtedly one of the most noble and sacred professions. We are truly fortunate to be a part of this field, which stands as a beacon of selfless service to humanity. Healthcare professionals work tirelessly, transcending boundaries of caste, creed, religion, community, nationality, and preferences. Their service is a testament to the divine nature of this profession.

We extend our deepest gratitude to all healthcare professionals for their unwavering commitment, particularly during the pandemic. When the world retreated behind closed doors, these brave individuals stood on the frontlines, leaving no stone unturned in saving the lives of people.

At CBS Publishers, we take great pride in supporting the healthcare community by offering resources that empower future professionals. Nine years ago, we laid the foundation in the PGMEE segment with titles such as the *Conceptual Review Series*, *SARP Series*, *AIIMS MedEasy*, *NIMHANS*, *PGI Chandigarh*, *My PGMEE Notes*, *ROAMS*, *PRIMES*, *FMGE Solutions* and many more.

What makes our PGMEE books stand out is the updated, simple, clear, and easy-to-understand language, making study sessions feel less like a challenge and more like an enjoyable learning experience. A team of our esteemed medical educators brings their expertise to create these comprehensive yet compact books, ensuring that all the critical topics are covered.

A special feature of our books is the use of illustrations that simplify complex concepts, making them easier to grasp. We also include previous years' questions, complete with detailed explanations, which are invaluable for exam preparation. Image-Based Questions (IBQs) further enhance the learning experience. The combination of concise theory and multiple-choice questions makes these books the ultimate tool to ease exam-related worries.

FMGE Solutions is one of our best-selling titles, meticulously designed to meet the specific needs of FMG aspirants. This comprehensive guide is an all-in-one resource for FMGE preparation, offering in-depth coverage of essential topics, detailed explanations, and a wide array of questions that reflect the latest exam patterns. Its reputation as a bestseller speaks to its effectiveness and reliability as a trusted resource for future medical professionals.

One Touch Series, is tailored specifically for aspirants of NEET PG, NExT, FMGE, and INI-CET. Conceptualized with a focus on last-minute revision, the *One Touch Series* covers a complete range of preclinical, paraclinical, and clinical subjects. These concise, expertly curated books are designed to help students efficiently review key concepts, ensuring they are well-prepared and confident as they approach their exams.

This year, we are introducing a new addition to the CBS Exam Book Series: *Ten into Ten* (Part A and B). According to the market research, there was a gap, and at present no book is available for practice. Although there are multiple apps from where students can attempt test series, for offline practice, no single update book is available in the market to fill this gap. The motto of this book is Practice: Practice: Practice as this book offers a decent amount of MCQs which will meet the evolving needs of students. *Ten into Ten* is a comprehensive question bank covering 19 medical subjects. It offers over 10,000 meticulously curated questions across 10 key subjects, crafted by 10 renowned medical scholars.

Following this, we will soon release the next part, *Nine into Nine*, further expanding our collection of practice materials for the PGME Examination, with the latest and most effective study approaches.

At CBS, we are committed to revolutionize the medical education and your support and encouragement can make our task easier. So, keep extending your support by sending your feedback to us. We will be highly pleased to serve you and make you victorious in your career. You can share your feedback at feedback@cbspd.com

Wishing you all the best in your endeavors.

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(Sr Vice President – Publishing & Marketing)
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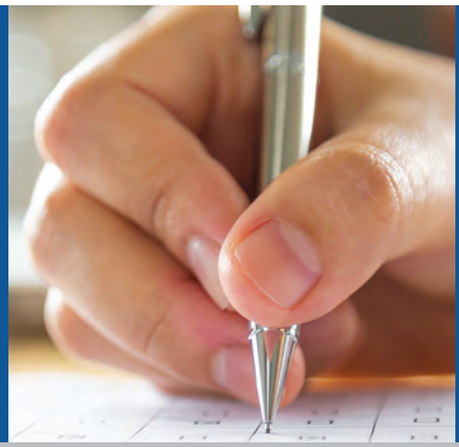

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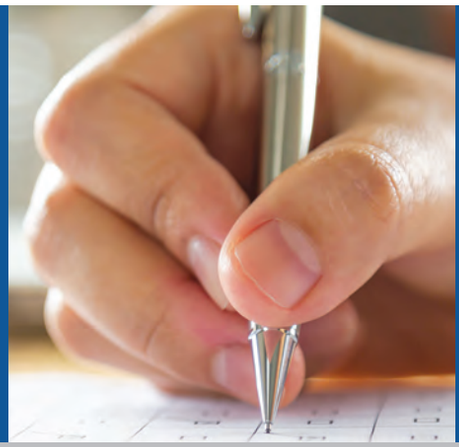


Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	ANATOMY				
1.	General Anatomy	2	51	18	71
2.	Histology	17	31	15	63
3.	Embryology	17	96	20	133
4.	Upper Limb	14	104	31	149
5.	Lower Limb	11	80	32	123
6.	Thorax	3	66	16	85
7.	Abdomen and Pelvis	24	120	29	173
8.	Head and Neck	26	77	19	122
9.	Neuroanatomy and Back	32	54	22	108
	Total Qs	**146**	**679**	**202**	**1027**
	PHARMACOLOGY				
1.	General Pharmacology	22	42	15	79
2.	Clinical Pharmacology	0	21	0	21
3.	Autonomic Nervous System	10	77	15	102
4.	Cardiovascular System	12	81	14	107
5.	Kidney	4	22	5	31
6.	Central Nervous System	41	77	15	133
7.	Antimicrobial Drugs	30	168	30	228
8.	Anticancer Drugs	11	37	15	63
9.	Endocrinology	11	54	15	80
10.	Autocoids and Immunomodulators	15	47	6	68
11.	Respiratory system	4	12	4	20
12.	Gastrointestinal system	5	26	6	37
13.	Blood	10	23	9	42
	Total Qs	**175**	**687**	**149**	**1011**

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	PATHOLOGY				
1.	**General Pathology**	**69**	**108**	**116**	**293**
	Cell Injury	16	19	23	58
	Inflammation and Thromboembolism	11	28	14	53
	Neoplasia	14	16	27	57
	Immunity	17	27	33	77
	Genetic Disorder	11	18	19	48
2.	**Systemic Pathology**	**54**	**84**	**208**	**346**
	Cardiovascular System	10	5	26	41
	Respiratory System	7	7	14	28
	Gastrointestinal System	6	10	23	39
	Liver, GB, Pancreas	1	3	19	23
	Renal System	7	11	35	53
	Central Nervous System	3	9	18	30
	Endocrinology	1	10	14	25
	Male and Female Genital System	8	3	35	46
	Breast	3	5	10	18
	Skin and Related Disorders	4	4	5	13
	Diseases of Muscles	0	2	1	3
	Bone	2	2	6	10
	Tumors of Soft Tissue, Head and Neck	2	13	2	17
3.	**Hematology**	**43**	**35**	**125**	**203**
	Red Blood Cells	14	10	42	66
	White Blood Cell	19	16	58	93
	Platelet and Bleeding Disorders	5	4	19	28
	Vacutainers and Instruments	5	5	6	16
4.	**Blood Banking And Transfusion Medicine**	**6**	**17**	**6**	**29**
	Total Qs	**172**	**244**	**455**	**871**

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	PREVENTIVE AND SOCIAL MEDICINE (PSM)				
1.	**Medical Research**	**56**	**151**	**15**	**222**
	Principles of Epidemiology	22	37	13	72
	Principles of Screening for Disease	7	31	1	39
	Biostatistics	27	83	1	111
2.	**Public Health**	**123**	**268**	**121**	**512**
	Demography and Family Planning	9	35	19	63
	Preventive Obstetrics	11	15	4	30
	Preventive Pediatrics	5	27	12	44
	Immunization and Vaccines	10	38	10	58
	Communicable Diseases and Related National Health Programs	42	39	53	134
	Noncommunicable Diseases and Related National Health Programs	14	36	5	55
	Health Planning and Healthcare Management	12	25	8	45
	Hospital Waste Management	8	21	2	31
	Health Education and Communication	2	7	5	14
	International Health Agencies	2	14	0	16
	Disaster Management	8	11	3	22
3.	**Preventive Medicine**	**53**	**241**	**36**	**330**
	Evolution and Concepts in Community Medicine	11	38	0	49
	Basis of Infectious Diseases	3	38	0	41
	Nutrition and Related National Health Programs	21	46	1	68
	Environment and Related National Health Programs	8	77	23	108
	Occupational Health	6	22	8	36
	Social Science and Health	3	13	4	20
	Mental Health and Genetics	1	7	0	8
	Total Qs	**232**	**660**	**172**	**1064**

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	OTOLARYNGOLOGY				
1.	Ear	36	258	43	337
2.	Nose	26	118	25	169
3.	Oral Cavity and Pharnyx	16	100	11	127
4.	Larynx	12	129	26	167
	Total Qs	**90**	**605**	**105**	**800**
	OPHTHALMOLOGY				
1.	Anatomy and Physiology of Eye	1	0	4	5
2.	Optics	11	16	13	40
3.	Strabismus	9	26	7	42
4.	Neuro-Ophthalmology	14	28	14	56
5.	Lens	7	42	9	58
6.	Glaucoma	14	29	8	51
7.	Uvea	5	21	5	31
8.	Retina	12	62	27	101
9.	Lacrimal Apparatus	4	12	3	19
10.	Orbit and Eyelids	10	24	9	43
11.	Trauma	5	14	2	21
12.	Conjunctiva	8	22	4	34
13.	Cornea	10	26	8	44
14.	Community Ophthalmology	1	4	2	7
15.	Miscellaneous	1	0	0	1
	Total Qs	**112**	**326**	**115**	**553**

MOST RECENT QUESTIONS
[NEET PG 2024 AND INI-CET MAY 2024]

Sl. no.	Subjects Covered	Total Qs
1.	ANATOMY	31
2.	PHARMACOLOGY	41
3.	PATHOLOGY	55
4.	PREVENTIVE AND SOCIAL MEDICINE (PSM)	52
5.	OTOLARYNGOLOGY	19
6.	OPHTHALMOLOGY	25

Most Recent Questions

[NEET PG 2024 and INI-CET MAY 2024]

ANATOMY

NEET PG 2024

1. Fracture at which site affects the longitudinal growth of a bone:

a. Epiphyseal plate
b. Diaphysis
c. Epiphysis
d. Metaphysis

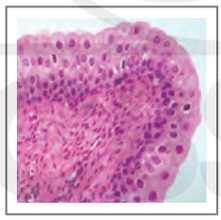
[Ref: Gray's Anatomy, 42nd ed., p. 97]

2. Chronic tobacco consumer went to dental clinic with bleeding lesions on tongue was diagnosed with tongue carcinoma. Which of the papillae does not have taste buds?

a. Circumvallate
b. Filiform
c. Fungiform
d. Foliate

[Ref: diFiore's Atlas of Histology with Functional Correlation, 11th ed., p. 235, 236]

3. Where will you find the epithelium shown in the image?



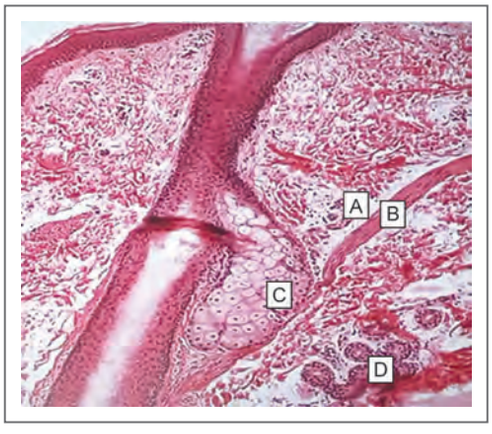
a. Ureter
b. Gallbladder
c. Duodenum
d. Trachea

[Ref: diFiore's Atlas of Histology with Functional Correlation, 11th ed., p. 38]

Explanation:

- This image is transitional epithelium, also known as urothelium.
- **Transitional epithelium** allows **distension** of the urinary organs (calyces, pelvis, ureters, bladder) during urine accumulation and **contraction** of these organs, while the emptying process without breaking the cell contacts in the epithelium.

4. Identify the markers in the given slide:



a. A – Apocrine sweat gland, B – Arrector pilorum, C – Eccrine sweat gland, D – Sebaceous gland
b. A – Arrector pilorum, B – Apocrine sweat gland, C – Eccrine sweat gland, D – Sebaceous gland
c. A – Sebaceous gland, B – Eccrine sweat gland, C – Arrector pilorum, D – Apocrine sweat gland
d. A – Eccrine sweat gland, B – Arrector pilorum, C – Sebaceous gland, D – Apocrine sweat gland

[Ref: diFiore's Atlas of Histology with Functional Correlation, 11th ed., p. 219, 223]

5. What is the outer covering of abnormal defect shown in the image?

a. Endoderm
b. Ectoderm
c. Chorion
d. Amnion

[Ref: Larsen's Human Embryology, 6th ed., p. 82]

Explanation: The covering of an omphalocele is a thin membrane made of:

- **Peritoneum:** Covers the inner surface of the membrane
- **Amnion:** Covers the outer surface of the membrane
- **Wharton's jelly:** Located between the peritoneum and amnion

6. Post ovulation, the oocyte is:

a. Primary oocyte arrested in prophase - I
b. Primary oocyte arrested in prophase - II
c. Secondary oocyte arrested in prophase - II
d. Secondary oocyte arrested in metaphase - II

[Ref: Larsen's Human Embryology, 6th ed., p. 27]

Explanation: The secondary oocyte promptly begins the second meiotic division but, about 3 hours before ovulation, is arrested at the second meiotic metaphase.

ANSWER KEY

ANATOMY

1. a **2.** b **3.** a **4.** d **5.** d **6.** d

ANATOMY

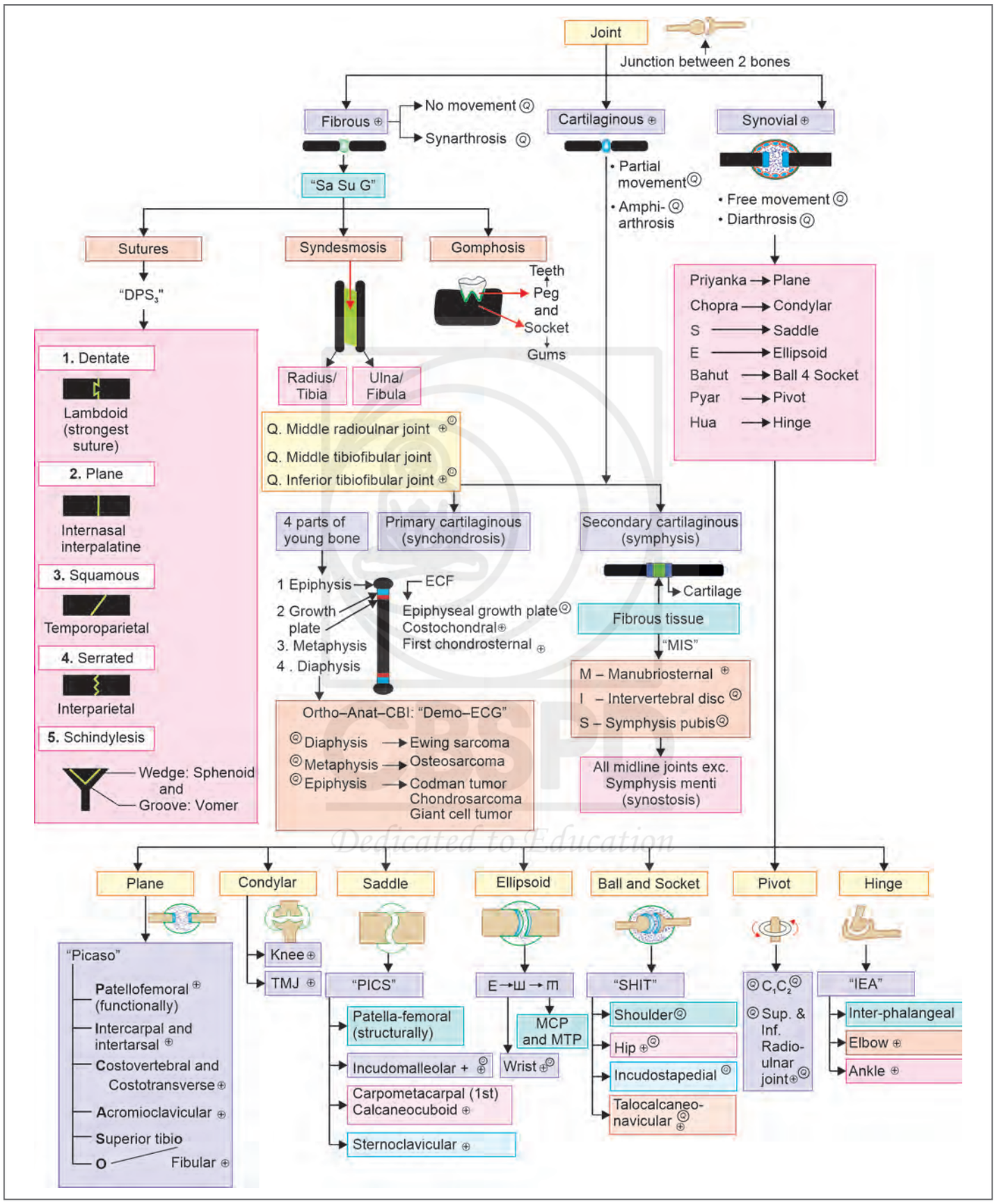
— *Dr Shrikant Verma*

SYNOPSIS

GENERAL ANATOMY

TYPES OF BONE

Bone types	Appearance	Function	Picture	Example(s)
Long bones	Longer than they are wide	Mechanical strength		• Femur • Tibia • Fibula • Humerus • Ulna • Radius
Short bones	Cube-shaped	Multidirectional motion		Carpal bones (of the hands/ wrists) and the tarsal bones (of the feet/ankles).
Flat bones	Thin and flat bones have large surfaces for muscle attachments	Mechanical protection to soft tissues beneath		• Cranial bones • Sternum • Ribs • Scapulae
Irregular bones	Complicated shapes that cannot be classified as "long", "short" or "flat".	Provide major mechanical support for the body Vertebra protects the spinal cord		• Vertebrae • Hyoid bone • Sphenoid bone • Facial bones
Sesamoid bones	Most sesamoid bones are un-named.	Protect from additional friction and use - can form in palms and soles		Only one type of sesamoid bone is present in all normal human skeletons so it has a name; the patella.



Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Shrikant Verma

GENERAL ANATOMY

[Total Questions 71]

1. Which of the following type of joint is present between the bones shown in the photograph? ***(INI-CET NOV 2023)***

a. Gliding
b. Pivot
c. Saddle
d. Ball and socket

[Ref: Gray's Anatomy, 42nd ed., International Edition, p. 748]

Explanation:

- Indicated joint is incudomalleolar joint which is saddle synovial joint while incudostapedial joint is ball and socket variety.
- Mnemonic "**SBI**"
  S: Saddle joint
  B: Ball and socket joint
  I: In front and behind the incus respectively

2. For side-to-side movement (right-left movement) at the neck, which of the following joints is involved? ***(NEET PG 2019)***

a. Atlanto-axial joint
b. Atlanto-occipital
c. Occipito-axial joint
d. C6–C7 articulation

[Ref: Gray's Anatomy, 42nd ed., p. 839–841]

Explanation: Atlanto-axial joint (C_1–C_2 Joint) is classical example of pivot joint which helps in rotatory movement of neck which results in side-to-side movement/right-left movement/"No" movement

3. Structure not forming watershed area is:

a. Brain
b. Splenic flexure
c. Duodenum
d. None of the above

[Ref: Gray's Anatomy, 42nd ed., p. 421, 1193]

Explanation: Watershed areas

- Regions of the brain lying at the extreme edges of the major cerebral arterial territories are called watershed areas and are the first to be deprived of sufficient blood flow in the event of cerebral hypoperfusion. Ischemic infarcts of the cortex and adjacent subcortical white matter in the border zones between these territories are known as watershed, boundary-zone or border-zone infarcts
- The left colic flexure marks the junction between the transverse and descending colons and lies in the left hypochondriac region, anterior to the tail of the pancreas and the left kidney.

4. Coracoid process of scapula is:

a. Traction epiphysis
b. Pressure epiphysis
c. Aberrant epiphysis
d. Atavistic epiphysis

[Ref: BD Chaurasia's General Anatomy, 6th ed., p. 65; Human Anatomy, 6th ed., vol. 1, p. 9]

Explanation:

- Atavistic epiphysis is phylogenetically an independent bone which fused to another bone.
- For example, coracoid process of scapula and os trigonum or lateral tubercle of posterior process of talus.

5. Example of traction epiphysis is:

a. Trochanters of long bone
b. Carpals
c. Coracoid process
d. Os trigonum

[Ref: BD Chaurasia's Handbook, 6th ed., p. 65]

Explanation: Examples of traction epiphysis are trochanters of femur and tubercles of humerus.

6. Which of the following is aberrant epiphysis?

a. Greater tubercle of humerus
b. Coracoid process
c. Base of 1st metacarpal
d. Base of 2nd metacarpal

[Ref: BD Chaurasia's General Anatomy, 6th ed., p. 34, 65]

ANSWER KEY

1. c	2. a	3. c	4. d	5. a	6. d

Explanation: Examples of Aberrant epiphysis are—epiphysis at the head of the 1st metacarpal and at the bases of other metacarpal bones.

7. Pisiform is which type of bone?
a. Pneumatic bone
b. Sesamoid bone
c. Long bone
d. Accessory epiphysis

[Ref: Gray's Anatomy, 42nd ed., p. 961; BD Chaurasia's General Anatomy, 7th ed., vol. 1, p. 32 & 6th ed., p. 30, 55]

Explanation: The pisiform is a sesamoid bone within the tendon of flexor carpi ulnaris that increases the flexion torque applied by the muscle.

8. Carpometacarpal joint of thumb is:
a. Saddle
b. Hinge
c. Pivot
d. Ball and socket

[Ref: Gray's Anatomy, 42nd ed., p. 969, BD Chaurasia's General Anatomy, 6th ed., p. 103 & 6th ed., vol. 1, p. 157]

Explanation:
- The carpometacarpal joint of the thumb is a sellar joint between the first metacarpal base and trapezium.
- It is curved saddle shape, as if designed for a 'scoliotic horse'

9. Median atlantoaxial joint is:
a. Cartilaginous
b. Condylar
c. Fibrous
d. Synovial joint

[Ref: Gray's Anatomy, 42nd ed., p. 840; BD Chaurasia's General Anatomy, 6th ed., p. 100 & Textbook of General Anatomy, p. 47]

Explanation:
- Pivot (Trochoid) Joints—articular surfaces comprise a central bony pivot (Peg) surrounded by an osteoligamentous ring.
- Movements are permitted in one plane around a vertical axis.
- For example, Superior and inferior radioulnar joints, median atlanto-occipital joints.

10. The metopic suture:
a. Separates frontal and parietal bones
b. Separates occipital and parietal
c. Separates two halves of frontal bone
d. Separates two halves of the parietal bone

[Ref: Gray's Anatomy, 42nd ed., p. 558; BD Chaurasia's Human Anatomy, 7th ed., vol. 3, p. 5 & 6th ed., p. 5]

Explanation:
- Superomedial to each orbit is a rounded superciliary arch (more pronounced in males), between which there may be a median elevation, the glabella.
- The glabella may show the remains of the interfrontal (metopic) suture, which usually closes in the first postnatal year (Weinzweig et al. 2003) but persists in a small percentage of adult skulls in various ethnic groups.
- A retained interfrontal suture is usually present in the inferior portion of the suture, a feature known as metopism.

ANSWER KEY

7. b	**8.** a	**9.** d	**10.** c	**11.** a	**12.** b
13. c	**14.** d	**15.** c	**16.** b		

11. Largest carpal bone is:
a. Capitate
b. Hamate
c. Scaphoid
d. Pisiform

[Ref: Gray's Anatomy, 42nd ed., p. 961, BD Chaurasia's Human Anatomy, 9th ed., vol. 1, p. 26; 7th ed., vol. 1, p. 24 & 6th ed., p. 26]

Explanation: The capitate is the central and largest carpal bone.

12. Thinnest bony part is found in which of the following bone:
a. Frontal
b. Ethmoid
c. Temporal
d. Sphenoid

[Ref: Gray's Anatomy, 42nd ed., p. 699]

Explanation:
- The ethmoidal sinuses differ from the other paranasal sinuses in that they are formed of multiple thin-walled cavities in the ethmoidal labyrinth.
- The number and size of the cavities vary, from 3 large to 18 small sinuses on each side.

They lie between the upper part of the nasal cavity and the orbit, and are separated from the latter by the paper-thin lamina papyracea or orbital plate of the ethmoid (this presents a poor barrier to infection, which may therefore spread into the orbit).

13. Which of the following is an atavistic epiphysis?
a. Lower end of radius
b. Condyles of femur
c. Coracoid process
d. Tubercle of humerus

[Ref: BD Chaurasia's Handbook 6th ed., p. 42; BD Chaurasia's Human Anatomy, 9th ed., vol. 1, p. 9]

Explanation: The coracoid process of scapula is an atavistic type of epiphysis.

14. Which is not a type of epiphysis?
a. Traction
b. Atavistic
c. Pressure
d. Friction

[Ref: BD Chaurasia's Handbook of General Anatomy, 6th ed., p. 65]

Explanation: **Types of epiphyses:**
According to number of epiphysis : Simple, compound
According to the function: Pressure, traction, atavistic, aberrant, compound.

15. Epiphysio-diaphyseal joint is:
a. Synostosis
b. Syndesmosis
c. Primarily cartilaginous
d. Schindylesis

[Ref: BD Chaurasia's Handbook, 6th ed., p. 64; Handbook of General Anatomy, 6th ed., p. 95]

Explanation: **Examples of primary cartilaginous joints:** Joint between epiphysis and diaphysis of a growing long bone, spheno-occipital joint, first chondrosternal joint, costochondral joints, xiphisternal joint.

16. Costochondral joint is example of:
a. Synovial joint
b. Primary cartilaginous joint
c. Secondary cartilaginous joint
d. Fibrous joint

[Ref: BD Chaurasia's Human Anatomy, 7th ed., vol. 1, p. 217; 6th ed., p. 209 & Handbook of General Anatomy, 6th ed., p. 95]

Explanation: Refer explanation of Q. 15

60. Which of the following bones comprises seven in numbers?

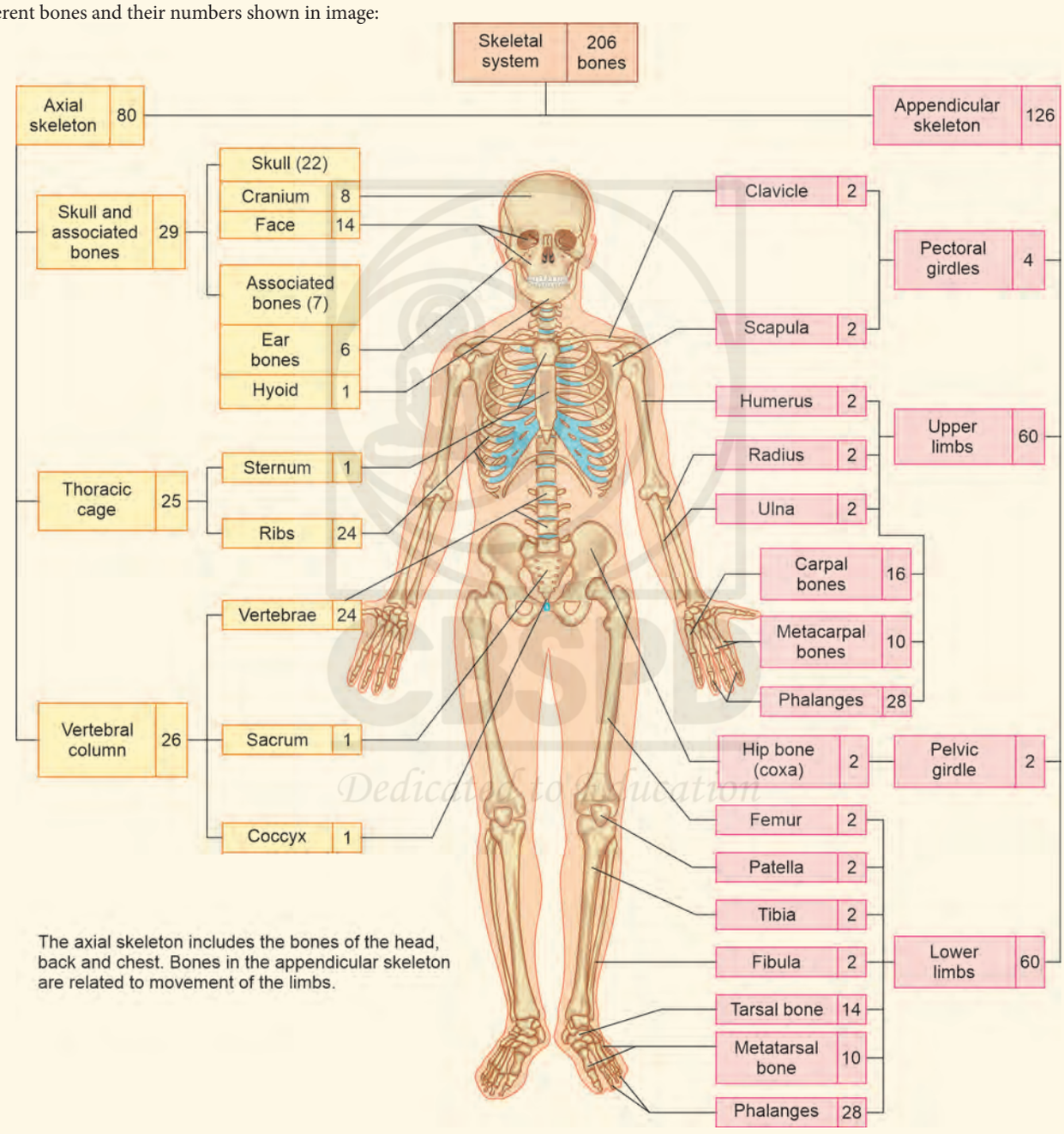
New Qs

a. Cervical vertebrae
b. Carpals
c. Cranial bones
d. Lumbar vertebrae

[Ref: BD Chaurasia's Human Anatomy, 9th ed., vol. 4, p. 34]

Explanation:

- Cervical vertebra are C1–C7.
- There are 8 carpals in each wrist.
- There are 8 cranial bones.
- There are 5 lumbar vertebrae.
- Different bones and their numbers shown in image:



Helpful Tips!

Create a Study Schedule: Allocate specific times for anatomy review to ensure consistent study habits and prevent cramming.

ANSWER KEY

60. a

PHARMACOLOGY

— *Dr Ranjan Kumar Patel*

SYNOPSIS

GENERAL PHARMACOLOGY

- **100% bioavailability** is achieved by intravenous route.
- Most common mode of drug absorption is by **passive diffusion**. Drugs ending with **tide/ase/mab** are proteins, have large size and **cannot be absorbed by oral route**.
- **Unionization (lipid solubility)** facilitates absorption whereas **ionization (water solubility)** facilitates excretion of drug.
- **pK_a** is the pH at which the drug is 50% ionized and 50% unionized.
- Bioavailability of a drug is calculated by formula AUCoral/AUCiv. It depends on **absorption** and **first-pass metabolism**.
- **Bioavailability or AUC** determines **extent** of drug absorption, whereas **T_{max}** determines **rate** of drug absorption.
- Drugs with **high volume of distribution** are located in **extravascular compartment,** whereas drugs with **low volume of distribution** are located in **intravascular compartment.**
- **Loading dose** depends on **aV_d**, whereas **maintenance dose** depends on **clearance**.
- Acidic drugs are bound to **albumin**, whereas basic drugs are bound to **alpha-1-acid glycoprotein**.
- The most common reaction of drug metabolism in phase I is **oxidation** and phase II is **glucuronidation**.
- Most common CYP450 enzyme for drug metabolism is **CYP3A4**.
- All **phase I reactions** and only **glucuronidation in phase II** are reactions by microsomal enzymes, i.e., in the sarcoplasmic reticulum.
- Enzyme inducers like rifampicin can cause OCP failure. Enzyme and p-glycoprotein inhibitors like **erythromycin/clarithromycin** can cause toxicity of drugs like **digoxin, theophylline and statins**.
- In **zero order,** a constant amount is eliminated, whereas in **first order,** a constant proportion is eliminated per unit time.
- In zero order, as dose increases $T_{1/2}$ increases but clearance decreases; in first order, both $T_{1/2}$ and clearance are constant.
- After **5 half-lives,** a drug achieves **steady state concentration**.
- **Ligand-gated ion channels** are fastest acting whereas **nuclear receptors** are the slowest acting receptors.
- **Potency** is a measure of drug **dose**, whereas **efficacy** is a measure of **maximum clinical effect** produced by the drug.
- Dissociation constant or **K_D** is the plasma concentration of drug at which 50% of the drug is bound to target.
- A graded DRC is drawn in an **individual**, whereas a quantal DRC is drawn in **population**.
- In a graded DRC, **height of the DRC** is a measure of **drug efficacy**, whereas the position of **DRC on log dose axis indicates potency.**
- In a quantal DRC, ED50 and TD50 can be calculated in humans and animals, whereas **LD50 can be calculated only in animals**. ED50 is a measure of drug potency, whereas TD50 and LD50 are measure of drug toxicity.
- In humans and animals, TD50/ED5 and LD50/ED50 are respectively used to calculate **therapeutic index**. Therapeutic index is a measure of **drug safety**.
- A **partial agonist** behaves as an antagonist in presence of an agonist. An inverse agonist is also an **antagonist**.
- Most common antagonism encountered is **competitive reversible antagonism**. In this antagonism, DRC makes a right shift; efficacy and V_{max} are same; potency decreases and Km increases.
- In noncompetitive antagonism, height of DRC decreases; efficacy and Vmax decreases; potency and K_m remains same.
- **GPCRs** are the most common target for drugs. GPCRs are also known as **heptahelical**, **7 transmembrane spanning** and **metabotropic** receptors.
- β receptors are **Gs** subtype, which act by increasing activity of **adenylate cyclase** and increasing cyclic AMP.
- Alpha receptors are **Gq** subtype, which act by increasing activity of **phospholipase-c** and increasing IP-3.
- Good Clinical Practice (**GCP)** guidelines are for clinical trials whereas Committee for the Purpose of Control and Supervision of Experiments on Animals (**CPCSEA)** guidelines are for preclinical trials.
- **Pharmacokinetics** and **pharmacodynamics** of a drug can be determined in phase 0 and phase I clinical trial. **Normal healthy**

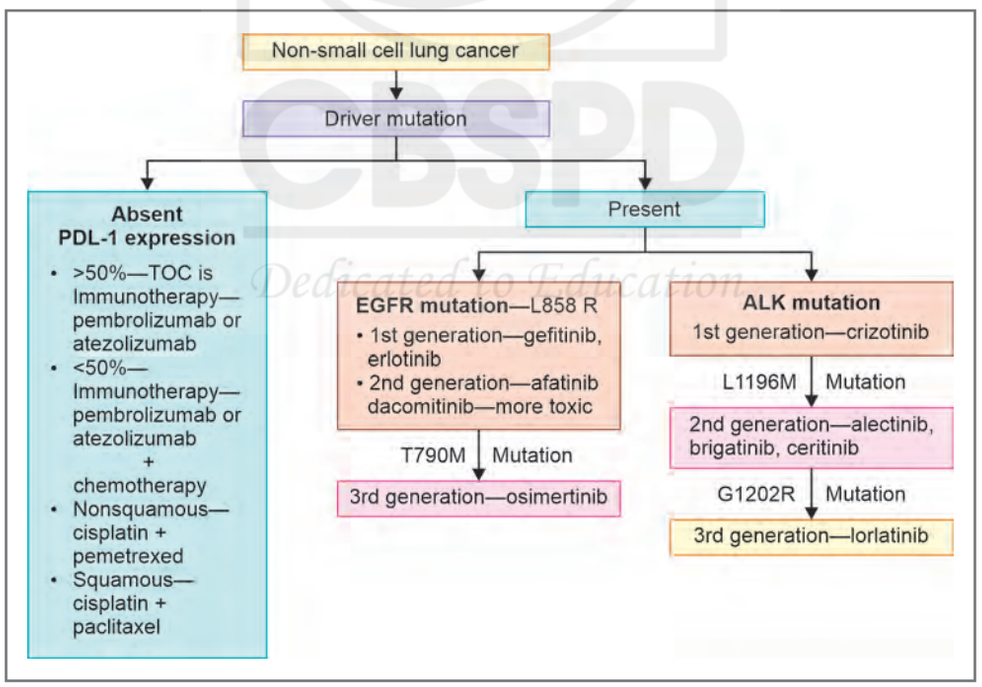
Carcinoid tumors	Octreotide
Carcinomatous meningitis	Methotrexate (Intrathecal)
Cervical cancer	Cisplatin
Choriocarcinoma	Methotrexate
CLL	• Regimen of choice: FCR • F: Fludarabine • C: Cyclophosphamide • R: Rituximab
• CML • GIST • Hypereosinophilic syndrome • Dermatofibrosarcoma protuberans	Imatinib
CML resistant to Imatinib	• Ponatinib • Nilotinib • Bosutinib • Dasatinib
Multi TK resistant (≥2) CML	• Omacetaxine • Asciminib

Colorectal Ca	• Drug of choice: 5-FU • Regimen of choice: ▪ FOLFOX – Folinic acid + 5-FU + Oxaliplatin ▪ FOLFIRI – Folinic acid + 5-FU + Irinotecan
• Esophageal Ca • Gastric Ca	Cisplatin + 5-FU
Hairy cell leukemia	Cladribine
Hepatocellular carcinoma	Sorafenib
Hodgkin's disease In case of relapse add – Nivolumab	• Regimen of choice: ABVD • A: Adriamycin (Doxorubicin) • B: Bleomycin • V: Vincristine • D: Dacarbazine
Kaposi sarcoma	• Doxorubicin Or • Daunorubicin

Contd...

Lung Cancer

- Small cell lung cancer
  Cisplatin + Etoposide + Immunotherapy (Atezolizumab or Durvalumab)
- Non-small cell lung cancer
  Refer to following flow chart to understand non-small cell lung cancer in detail.



Named Trials in NSCLC

- Keynote 189 trial – Chemotherapy + Pembrolizumab
- Checkmate 227 trial – Ipilimumab + Nivolumab

Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Ranjan Kumar Patel

GENERAL PHARMACOLOGY

[Total Questions 79]

1. Which of the following drugs acts *via* the ATP-binding cassette transporter? ***(INI-CET NOV 2023)***

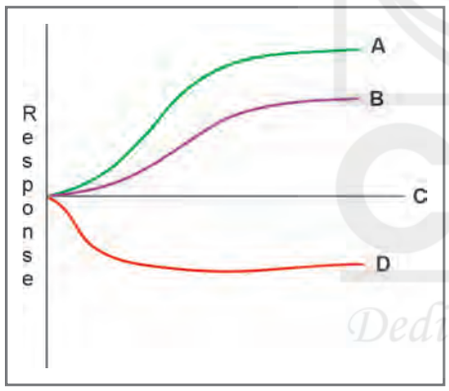
1. Verapamil
2. Diltiazem
3. Nifedipine
4. Tacrolimus

a. 1 and 2 b. 1 and 3 c. 1, 2 and 4 d. 1, 3 and 4

[Ref: Internet] https://www.ncbi.nlm.nih.gov/.]

Explanation: Non-DHPs are substrate for ABC Pumps (ATP Binding Cassette) or MDR-1/P-glycoprotein pump, but not DHPs.

2. Which of the following options is correct regarding drug receptor interaction given in the picture? ***(INI-CET MAY 2022)***



a. A—Full agonist, B—Partial agonist, C—Antagonist, D—Antagonist
b. A—Full agonist, B—Partial agonist, C—Inverse agonist, D—Antagonist
c. A—Partial agonist, B—Full agonist, C—Inverse agonist, D—Antagonist
d. A—Partial agonist, B—Full agonist, C—Antagonist, D—Antagonist

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th ed., p. 54-70]

Explanation: An inverse agonist is also an antagonist.

3. A brand markets Paracetamol as 400 mg but it only has 200 mg. The drug will be called a: ***(INI-CET MAY 2022)***

a. Spurious drug b. Adulterated drug c. Unethical d. Misbranded

[Ref: KD Tripathi. Essentials of Medical Pharmacology, 8th ed., p. 223-24]

Explanation: Lesser amount of drug present than expected in a tablet makes it a spurious drug.

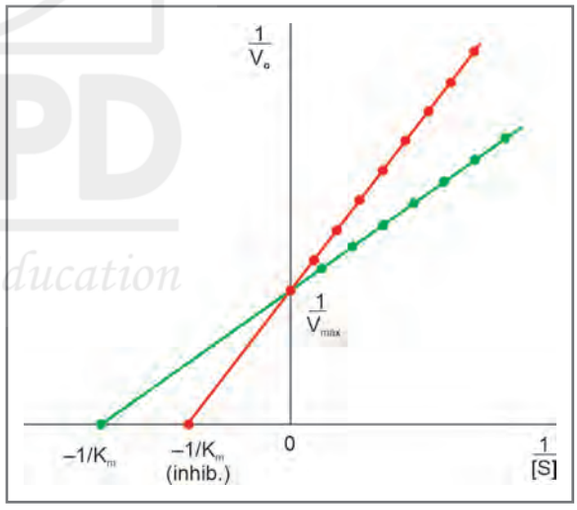
4. Which of the following acts by increasing phospholipase C? ***(INI-CET MAY 2022)***

a. Gs b. Gq c. Gi d. Go

[Ref: KD Tripathi, Essential of Medical Pharmacology, p. 55-57]

Explanation: Gs acts *via* adenylate cyclase, whereas Gq acts *via* phospholipase C.

5. The graph given in the picture is an example of: ***(INI-CET MAY 2022)***



a. Competitive inhibition
b. Noncompetitive inhibition
c. Uncompetitive inhibition
d. None of the above

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th ed., p. 47]

ANSWER KEY

1. c	2. a	3. a	4. b	5. a

28. True about pKa is:

a. pH at which ionized fraction of drug equals to unionized fraction
b. pH at which ionized fraction of drug is more than unionized fraction
c. pH at which ionized fraction of drug is less than unionized fraction
d. pH at which ionized fraction of drug is twice unionized fraction

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12th ed., p. 18]

Explanation: pKa is the pH at which a drug is 50% ionized and 50% unionized, i.e., the fraction of ionized drug equals to the fraction of unionized drug.

29. Digoxin has a half-life of 40 hours, which helps in prescribing to determine:

a. Regimen for smooth discontinuation
b. Need for loading dose in order to give immediate effect
c. Regimen for maintenance dose
d. Can be given once in 2 days

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12th ed., p. 37]

Explanation: Half-life tells us about the time we need to achieve steady state, i.e., 4–5 half lives.

Thus for digoxin, it will require 200 hours to achieve steady state.

Hence, to achieve steady state faster loading dose is given.

30. Loading dose of a drug primarily depends on:

a. Volume of distribution
b. Clearance
c. Rate of administration
d. Half-life

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12th ed., p. 37]

Explanation: **Loading dose**

$$aVd = D/C$$

or

$$D = aVd \times C$$

The plasma concentration must be specific for a particular clinical effect. If drug has a high volume of distribution, then to maintain a specific plasma concentration, in the equation above we must increase the dose "D" of the drug. This increased dose of drug for drugs with high aVd to maintain a specific plasma concentration is known as loading dose. Thus loading dose depends on aVd and the formula for calculation is,

Loading dose (LD) = aVd × C

31. In metabolism of xenobiotics, all of the following reactions occur in phase one; except:

a. Oxidation
b. Reduction
c. Conjugation
d. Hydrolysis

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12th ed., p. 138]

Explanation: **Reactions of Phase I and II**

Mnemonics

Phase I: ORCHAD	Phase II: GAMS
O : Oxidation	**G :** Glucuronidation, Glutathionylation, Glycination
R : Reduction	**A :** Acetylation
C : Cyclization	**M :** Methylation
H : Hydrolysis	**S :** Sulfation
A : Aliphatic and aromatic hydroxylation	
D : Deamination	

In phase I grow fruits in an ORCHAD and then in phase II make fruit GAMS.

32. Which of the following is true regarding a drug with high plasma protein binding?

a. Decreased glomerular filtration
b. Decreased tubular secretion
c. Increased volume of distribution
d. Less drug interaction

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th ed., p. 18]

Explanation: It is a basic concept in physiology that proteins can never get filtered out from a normal kidney as the glomerular bed is charged and proteins are also charged particles.

Hence, plasma protein bound drugs cannot undergo glomerular filtration.

Though plasma protein bound drugs can undergo tubular secretion.

33. Drug transport across the cell membrane is mainly by:

a. Passive transport
b. Active
c. Facilitated
d. Pinocytosis

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12th ed., p. 20]

Explanation: **Most common process of drug absorption is passive diffusion** through lipid barrier and hence, it is generalized that a drug is absorbed when it is in lipid soluble form.

34. Ciprofloxacin should not be given to an asthmatic using theophylline because:

a. Ciprofloxacin inhibits theophylline metabolism
b. Theophylline inhibits ciprofloxacin metabolism
c. Ciprofloxacin decreases effect of theophylline
d. Theophylline induces metabolism of ciprofloxacin

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 19th ed., p. 130]

35. False regarding Cytochrome P-450 is:

a. They are essential for the production of cholesterols, steroids, prostacyclins and thromboxane A2
b. They absorb light with 450 nm wavelength
c. They occur predominantly in liver
d. They are non-heme proteins

[Ref: Basic and Clinical Pharmacology by Katzung, 12th ed., p. 55]

ANSWER KEY

28. a	**29.** b	**30.** a	**31.** c	**32.** a	**33.** a
34. a	**35.** d				

DID YOU KNOW?

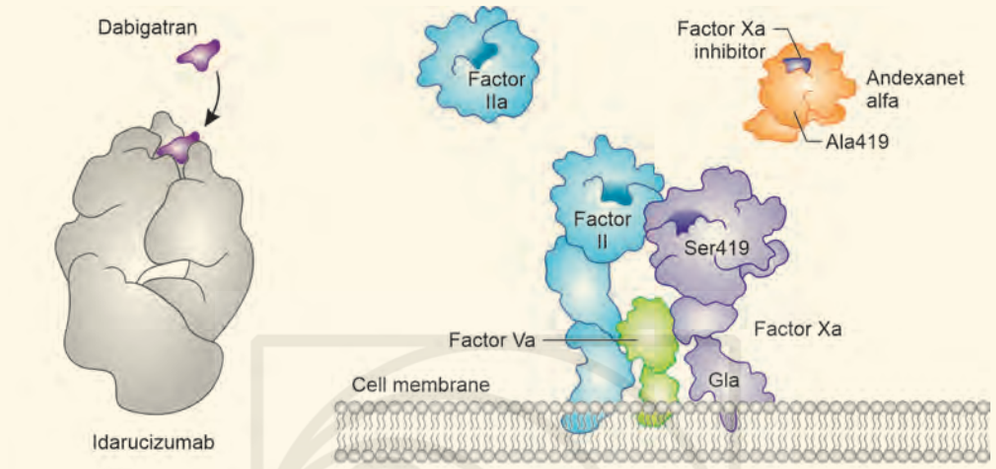
Generic and brand names of drugs are often tested.

1005. Ciraparantag is a wide spectrum antidote against all of the following drugs; except: New Qs

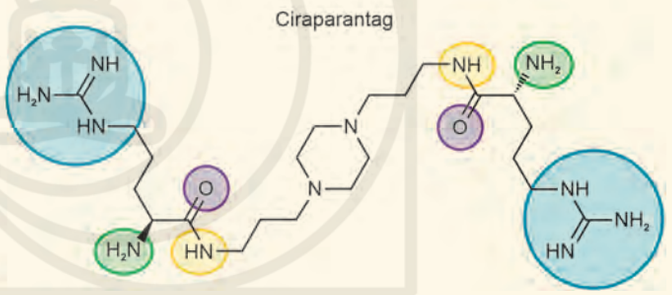
a. Heparin
b. Fondaparinux
c. DOAC
d. Warfarin

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th ed., p. 720, 726]

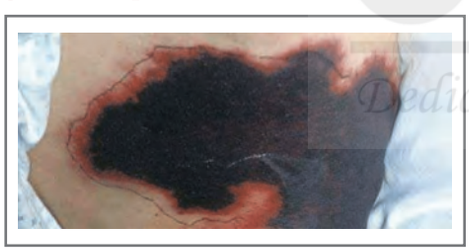
Explanation:



Drug	Binding sites
Apixaban	● ●
Dabigatran	● ● ●
Edoxaban	● ●
Fondaparinux	● ● ●
Rivaroxaban	● ● ●
UFH or LMWH	● ● ●



1006. A patient was started on warfarin and developed the side-effect given in the image. All of the following can be used in management; except: New Qs



a. Protein C concentrate
b. FFP
c. Vitamin K
d. 4 factor PTC

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th ed., p. 717-718]

Explanation: Warfarin-induced skin necrosis is due to rapid decline in protein C. 4 factor prothrombin complex has factor II, VII, IX, X, but no protein C; hence, it cannot be used.

1007. A patient on anticoagulation therapy developed the side-effect given in picture. Which of the following might be the reason for the same? New Qs

a. Paradoxical thrombosis
b. Cholesterol embolization
c. Drug induced pigmentation
d. Vasoconstriction

[Ref: Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th ed., p. 717-718]

Explanation: Warfarin-induced purple toe is due to cholesterol embolization.

ANSWER KEY

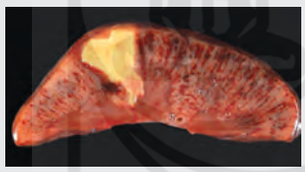
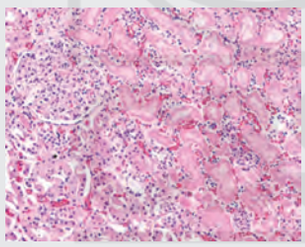
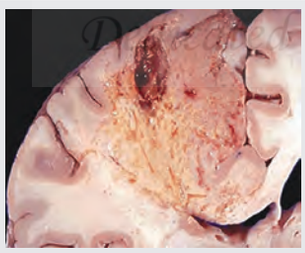
1005. d **1006.** d **1007.** b

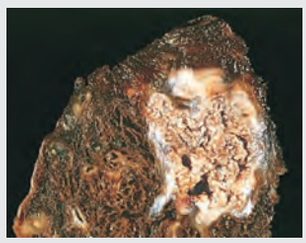
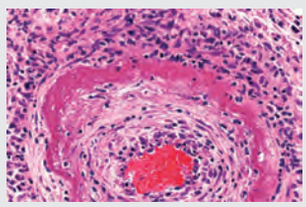
PATHOLOGY

— *Dr Preeti Sharma*

SYNOPSIS

TYPES OF NECROSIS

Necrosis	Features	Images
Coagulative necrosis	• Most common necrosis • Seen in solid organs • Tissue architecture preserved • Microscopically ghost cells seen	 
Liquefactive necrosis/ colliquative necrosis	Seen in brain and pancreas	

Necrosis	Features	Images
Caseous necrosis	• Combination of coagulative and liquefactive necrosis • Causes: ▪ TB ▪ Histoplasmosis • Grossly cheesy appearance noted	
Fat necrosis	• Seen in breast and omentum. • Characterized by deposition of chalky white calcium	
Fibrinoid necrosis	• Seen in ▪ PAN ▪ SLE ▪ RHD ▪ Malignant HTN	

CASPASES AND MARKERS

Apoptosis initiation	Caspase 8, 9, 10
Apoptosis execution	Caspase 3, 6, 7
Apoptosis marker	Annexin V
Apoptosis molecular marker	CD 95/Fas
Pyroptosis	Caspase 1, 4, 5, 11

Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Preeti Sharma

GENERAL PATHOLOGY

[Total Questions 293]

CELL INJURY

1. Which of the following are the features of necrosis? ***(INI-CET MAY 2023)***

a. Disrupted cell membrane b. Induces inflammation
c. Cell swelling d. Physiological
a. a and b b. a, b and d
c. a, b and c d. a and c

[Ref: Robbins and Cotran, 10th ed., p. 39]

Explanation: Necrosis is always pathological. Apoptosis can be both physiological as well as pathological.

2. Which of the following is an antiapoptotic gene? ***(INI-CET MAY 2023)***

a. BAK b. BAX
c. Mcl-1 d. PUMA

[Ref: Internet]

Explanation: Bcl-2, Mcl-1, Bcl-XL are antiapoptotic. P53, BAK, BAX, Bcl-XS are proapoptitic.

3. Abnormal folding of proteins causes which of the following disease? ***(INI-CET MAY 2023)***

a. Creutzfelt-Jakob disease b. Cirrhosis
c. Nephritic syndrome d. Sickle cell anemia

[Ref: Harsh Mohan, Textbook of Pathology, 8th ed., p. 925]

Explanation: Abnormal folding of proteins is seen in prion diseases (e.g., CJ disease). This causes spongiform changes/vacuolations in CNS, thereby also known as transmissible spongiform encephalopathy (TSE).

4. Senile atrophy is seen in: ***(INI-CET NOV 2022)***

a. Denervation b. Decreased nutrition
c. Decreased workload d. Reduced blood supply

[Ref: Robbins and Cotran, 10th ed., p. 60]

5. Match the following stains and the tissue. ***(INI-CET NOV 2022)***

Column A	Column B
1. Prussian blue stain	A. Iron
2. PAS stain	B. Glycogen
3. Congo red stain	C. Leprosy
4. Fite–Faraco stain	D. Amyloid

a. 1-D, 2-C, 3-B, 4-A b. 1-C, 2-A, 3-D, 4-B
c. 1-A, 2-B, 3-D, 4-C d. 1-B, 2-A, 3-C, 4-D

[Ref: Internet]

6. Which of the following are true regarding sirtuins? ***(INI-CET NOV 2022)***

1. Increases insulin sensitivity
2. Promotes genes which increase longevity
3. They are 7 types
4. Is a type of histone deacetylase

a. 1, 2, 3 b. 1, 2, 3, 4
c. 2, 3 d. 2, 4

[Ref: Robbins and Cotran, 10th ed., p. 68]

7. Cell in cell appearance is seen in: ***(INI-CET MAY 2022)***

a. Necrosis b. Apoptosis
c. Necroptosis d. Emperipolesis

[Ref: Internet]

Explanation: Emperipolesis is defined as cell in cell appearance without killing. It is seen in

- MDS/MPN
- Rosai-Dorfman Disease
- Autoimmune hepatitis
- CLL

8. True statement of telomerase theory of aging is: ***(NEET PG 2022)***

a. Increasing telomere length is proportional to aging
b. Telomere mutation is associated with increased aging
c. Decreased telomere length is associated with aging
d. Increased telomerase activity is associated with aging

[Ref: Robbins and Cotran, 10th ed., p. 66–69]

Explanation: Cellular aging is due to telomere shortening. One telomere sequence is TTAGGG.

9. Which of the following will increase life span/delay the aging process? ***(NEET PG 2022)***

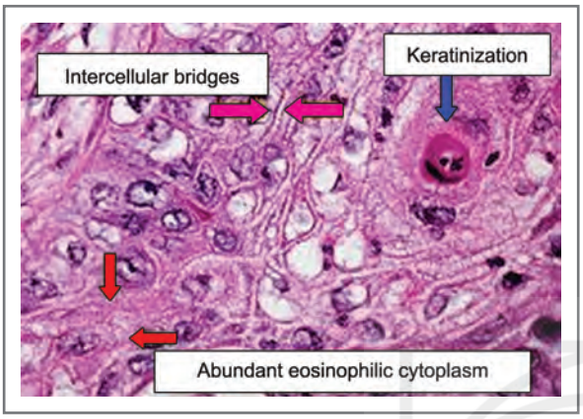
a. Regular exercise
b. Decrease stress
c. Decrease calorie by 30%
d. Pharmacological intervention by taking PPIs

[Ref: Robbins and Cotran, 10th ed., p. 68]

ANSWER KEY

1. c. **2.** c. **3.** a. **4.** d. **5.** c. **6.** b.
7. d. **8.** c. **9.** c.

338. An adult male patient presented with shortness of breath, hemoptysis and weight loss. On examination, hilar mass was present. Histopathological image is shown as follows. Immunohistochemistry revealed that the cells were positive for p40. What is the diagnosis? ***(INI-CET NOV 2022)***



a. Squamous cell carcinoma b. Adenocarcinoma lung
c. Small cell cancer lung d. Large cell carcinoma

[Ref: Internet]

Explanation: Squamous cell carcinoma lung shows keratin pearls histologically. Immunohistochemistry shows positivity for p63 and p40 (best marker).

339. A chronic smoker presents with shortness of breath. A mass is noted at the lower lobe periphery of the lung. Biopsy is performed and histopathological examination reveals lung adenocarcinoma. The biopsy will be positive for: ***(INI-CET NOV 2022)***

1. TTF-1 2. P40
3. Napsin A 4. Chromogranin

a. 1, 2 b. 1, 3
c. 1, 4 d. 2, 4

[Ref: Internet]

Explanation: Lung adenocarcinoma is positive for TTF1, NAPSIN A and Muc 1.

340. A 70-year-old patient presented with cough, fatigability and weight loss. He was diagnosed with squamous cell carcinoma on bronchoscopy. Resected specimen also had hilar lymph node 1 cm in size and it showed black pigment. What is the black pigment likely to be? ***(INI-CET JULY 2021)***

a. Anthracotic pigment b. Melanin
c. Lipochrome d. Hemosiderin

[Ref: Internet]

Explanation: Anthracotic pigment (carbon) gives a black color to lung. This is commonly seen in smokers and persons working in the coal industry.

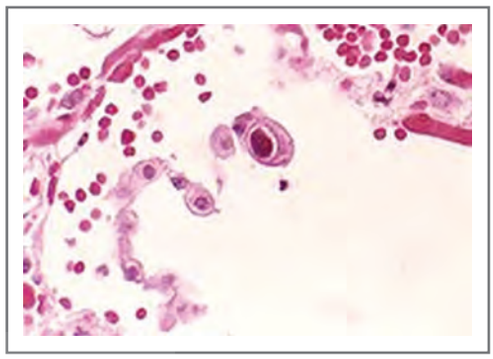
341. Alpha-1 antitrypsin acts to prevent lung tissue destruction by: ***(NEET PG 2019)***

a. Inhibiting the release of trypsin
b. Inhibiting the activation of trypsinogen
c. Inhibiting the release of chymotrypsin
d. Inhibiting the elastase in lung

[Ref: Internet]

Explanation: Alpha-1 antitrypsin is an anti-elastase or anti-protease.

342. A middle aged immunocompromised man came with fever and breathlessness. HRCT showed a middle lobe lesion with infiltration. Lung biopsy from the lesion is shown as follows. Diagnosis is:



a. CMV organizing pneumonia
b. Cryptogenic organizing pneumonia
c. Small cell carcinoma lung
d. Organized Pneumonia with tuberculosis

[Ref: Robbins and Cotran, 10th ed., p. 356–357]

Explanation: Cytomegalovirus (CMV) infection shows intranuclear and intracytoplasmic inclusions. Appearance of intranuclear inclusions is known as owl eye appearance.

343. Gross specimen of lung from a patient is shown in the following figure. What is the most probable diagnosis?

a. Pneumoconiosis b. Miliary tuberculosis
c. Bronchiectasis d. Pneumonia

[Ref: Internet]

344. Whole blood is used in diagnosis of TB in:

a. Gamma interferon assay b. Gene Xpert
c. Bactec test d. Blood culture

[Ref: Internet]

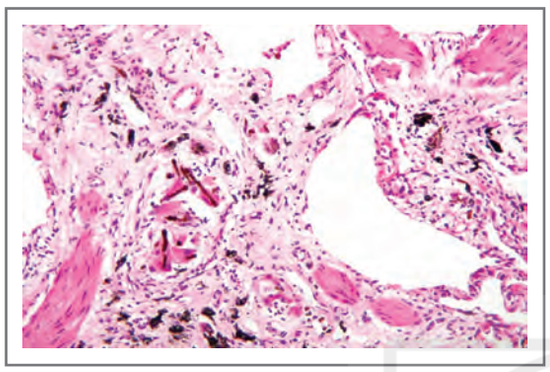
Explanation: Whole blood is used in diagnosis of latent Tb using Quantiferon GOLD/ Interferon gamma release assay (IGRA).

This tests measures T-cell release of IFN-γ following stimulation by antigens specific to the M. tuberculosis complex, i.e., ESAT-6 and CFP-10.

ANSWER KEY

338. a. **339.** b. **340.** a. **341.** d. **342.** a. **343.** b. **344.** a.

345. A middle aged man comes with breathing difficulty. He gives history of working in a factory. Lung fibrosis and pleural thickening where observed and biopsy was taken. On histopathological examination, the following picture of lung parenchyma was seen. Most likely diagnosis is?

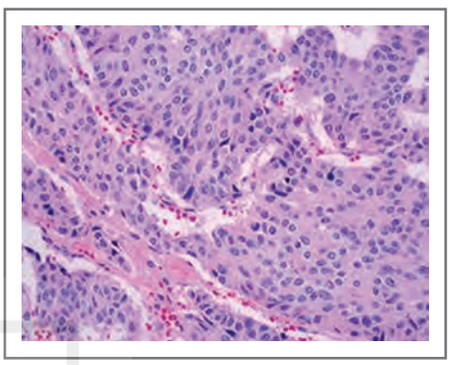


a. Silicosis
b. Coal workers' pneumoconiosis
c. Asbestosis
d. Byssinosis

[Ref: Robbins and Cotran, 10th ed., p. 280t, 694, 695t]

Explanation: Histopathological image shows dumbbell shaped Asbestos Bodies/ Ferruginous bodies. These show deposition of iron around the asbestos fibres and stain positive for Perl's or Prussian blue.

346. A patient presented with 4-month history of cough with diarrheal episode. Bronchoscopy revealed an intrabronchial polyp. Biopsy from the polyp showed atypical cells with microscopic necrosis and 5 mitotic figures per 10 high-power fields shown as follows. Chromogranin staining was positive. What is the diagnosis and grade of the lesion?



a. Typical carcinoid
b. Atypical carcinoid
c. Small cell carcinoma
d. Large cell neuroendocrine carcinoma

[Ref: Internet]

Explanation: **Typical carcinoids have a mitotic rate of 2 mitoses/2 mm² and no necrosis**, while atypical carcinoids have a mitotic rate of 2–10 mitoses/2 mm² or necrosis.

347. Which type of paraneoplastic syndrome is most commonly associated with small cell lung carcinoma?

a. SIADH
b. Gynecomastia
c. Acanthosis nigricans
d. Hypocalcemia

[Ref: Robbins and Cotran, 10th ed., p. 1074]

Explanation: **SIADH** is most commonly associated with small cell lung carcinoma/ oat cell cancer.

Paraneoplastic syndromes associated with lung carcinoma

Features	Squamous cell carcinoma	Adenocarcinoma	Small cell carcinoma	Large cell cancer
Paraneoplastic syndrome	Hypercalcemia	Migratory thrombophlebitis	SIADH, Lambert-Eaton syndrome, Cushing's disease	Gynecomastia

348. Malignancy associated hypercalcemia is due to:

a. Tumor lysis syndrome
b. Parathyroid related peptide
c. IL-7
d. Hypocalcemia

[Ref: Internet]

349. Reid's index is? New Qs

a. Increased in chronic bronchitis
b. Decreased in chronic bronchitis
c. Increased in bronchial asthma
d. Decreased in bronchial asthma

[Ref: Internet]

Explanation:

$$\text{Reid index} = \frac{\text{Thickness of submucosal gland}}{\text{Overall thickness of wall}}$$

Normal RI = 0.4
RI is increased in chronic bronchitis

350. Most common cause of atypical pneumonia is: New Qs

a. *Mycoplasma pneumoniae*
b. *Streptococcus pneumoniae*
c. Measles
d. *Haemophilus influenzae*

[Ref: Internet]

Explanation:
Most common cause of atypical pneumonia or walking pneumonia is *Mycoplasma pneumoniae*.

Mycoplasma is the smallest bacterium and does not have a cell wall.

It shows fried egg colonies on PPLO agar which are visualized by staining with Diene's stain.

ANSWER KEY

345. c. **346.** b. **347.** a. **348.** b. **349.** a. **350.** a.

Preventive and Social Medicine (PSM)

— Dr Mukhmohit Singh

SYNOPSIS

PRINCIPLES OF EPIDEMIOLOGY

	Cross-sectional	Ecological	Case control	Cohort
Also known as	Snapshot of population	Correlational study	Retrospective study	Prospective study
Unit	Individual	Population	Individual	Individual
Start with	Total population	Data sources for population	Disease and non-disease	Risk factor exposed and nonexposed
Use	Prevalence	Correlation of variables	Odds ratio	Risk ratio, attributable risk
Bias	Selection bias	Ecological fallacy	Recall bias	Hawthorne effect, attrition bias
			Multiple risk factors can be assessed	Multiple outcomes can be assessed
			Rare disease	Rare risk factors
			Effect to cause	Cause to effect
			Less expensive, less time	More expensive, more time

Formula

- **Odds ratio:** Cross product ratio
- **Relative risk:** Incidence exposed/Incidence nonexposed
- **Attributable risk:** Incidence exposed—Incidence nonexposed)/ incidence exposed

Treatment

Bias: Blinding (triple blind is best type of blinding)

Confounder

Known confounder: Matching
Unknown confounder: Randomization, regression, stratification, standardization

Standardization

- **Direct standardization:** If the age specific death rates of population is available, we can directly compare with reference population.
- **Indirect standardization:** If the age specific death rates of population is NOT available, we can calculate the standardized mortality ratio (SMR) by comparing with the total deaths with reference population as follows:

$$\text{SMR} = \frac{\text{Observed deaths}}{\text{Expected deaths}} \times 100$$

PRINCIPLES OF SCREENING FOR DISEASE

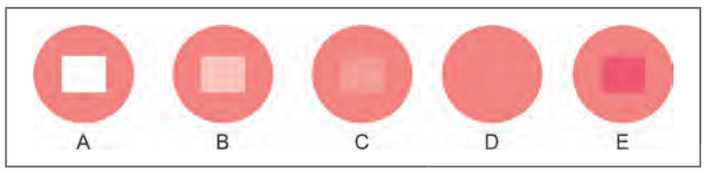
- **Sensitivity:** Probability of having test positive out of **total diseased**.
- **Specificity:** Probability of having test negative out of **total healthy**.
- **Positive predictive value:** Probability of having disease out of **total tested positive.**
- **Negative predictive value:** Probability of having disease out of **total tested negative.**
- **Likelihood ratio:**
  - **For positive test** $= \frac{\text{sensitivity}}{1 - \text{specificity}}$
  - **For negative test** $= \frac{1 - \text{sensitivity}}{\text{specificity}}$

- JE vaccine—till 15 years
- Hep B (birth dose)—till 24 hours of birth
- OPV (zero dose)—till 15 days of life

Cold chain temperature— +2° to +8°C

Vaccine Vial Monitor

- Qualitative check for effectivity of heat sensitive vaccines
- Discard point—square becomes same color (or darker) than the outer circle
- Vaccine vials which have VVM on body follow open vial policy.



Discard point is – Image D

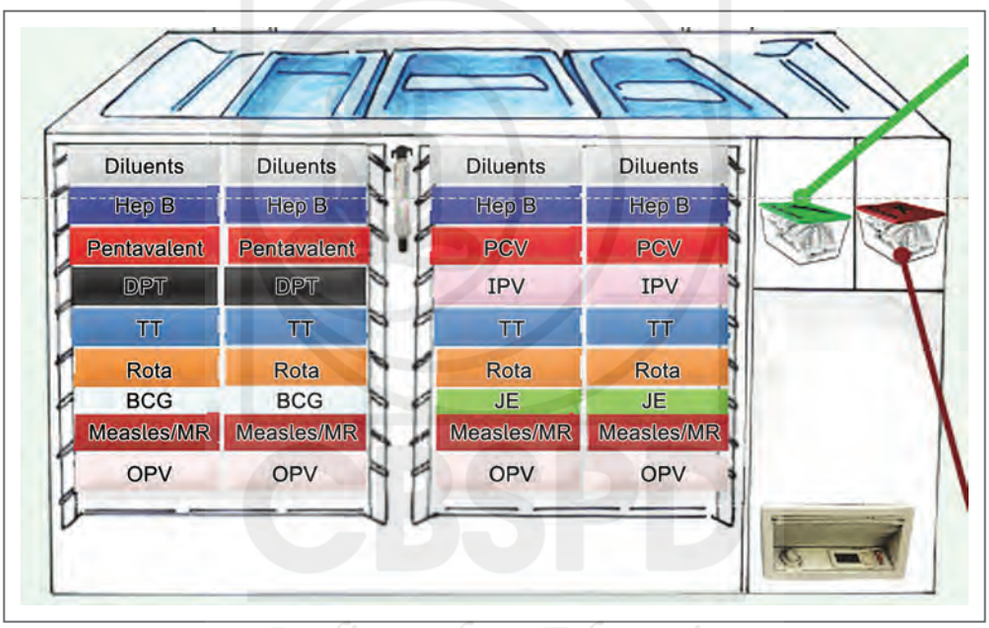
Heat sensitive vaccine: OPV > Measles or MR > BCG
Freeze sensitive vaccine: Hep B > Pentavalent > DPT

Cold Chain Equipment

- **Vaccine carrier:** 16–20 vials, 4 ice packs
- **Cold boxes:** 75–300 vials (depending on size—5 liters or 20 liters) with ice packs.

Ice Lined Refrigerator

- Needs at least 8-hour electricity in 24 hours to maintain temperature
- Storage:
  - Diluents always kept in top shelf of ILR
  - In upper shelves of ILR—Freeze sensitive vaccines
  - In bottom shelves of ILR—heat sensitive vaccines
- Use dial thermometer for temperature recording (usually done twice daily).



Ice lined refrigerator

Shake Test

- For freeze sensitive vaccines (hepatitis B, DPT, TT, Td, Typhoid vaccines)
- It is not to be performed for OPV, measles and BCG vaccines.

Open Vial policy: All vaccines can be reused within 28 days of opening, **EXCEPT** BCG and MR vaccine.

Strains of Vaccine

- **Yellow fever:** 17 D, live vaccine, one dose given in lifetime
- **BCG:** Danish 1331, live attenuated
- **OPV:** SABIN strain
- **IPV:** SALK
- **Chicken pox:** OKA vaccine, live vaccine
- **Measles:** Edmonston zagreb
- **Mumps:** Jeryll Lyn
- **Rubella:** RA 27/3 Winstar vaccine
- **Plague:** Modified Sokhey vaccine
- **Malaria:** Mosquirix vaccine (RTS,S AS01 vaccine)
- **Leprosy:** Mycobacterium indicus pranii (MW vaccine—older name)
- **Typhoid:**
  - Oral typhi 21 a—live vaccine
  - Vi polysaccharide vaccine—for age >2 years
  - Typhoid conjugate vaccine—single dose for high risk susceptible
- **Meningococcal:** A,C, W135, Y quadrivalent vaccine
- **Pneumococcal:** Pneumococcal conjugate vaccine, Pneumococcal polysaccharide vaccine.
- **COVID Vaccines**
  - **Viral vector vaccines:**
    - Covishield—using CHAD-OX1 strain, with chimpanzee adenovirus
    - Sputnik—human adenovirus vaccine
    - Janssen—viral vectored vaccine by Johnson and Johnson
    - INCOVACC (2022)—BBV154 nasal vaccine
      - » Recombinant replication deficient adenovirus vectored vaccine with a prefusion stabilized spike protein

Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Mukhmohit Singh

MEDICAL RESEARCH

[Total Questions 222]

PRINCIPLES OF EPIDEMIOLOGY

1. What kind of study is longitudinal and analytical? ***[INI-CET NOV 2023]***

a. Ecological study
b. Cross-sectional study
c. Case control study
d. Randomized clinical trials

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 78]

Explanation: Case control and Cohort studies are longitudinal studies.

- Case control is retrospective and Cohort study is prospective study design.
- Cross-sectional is transverse study.
- Ecological is correlational study.

2. About 30,000 women were followed-up for 10 years for development of breast cancer. 1200 women developed cancer and were given questionnaire for assessing possible risk factors. Additionally, 2000 women from the same study were used as control and they were also given questionnaire. What is this type of study called? ***(INI-CET MAY 2023)***

a. Nested case control
b. Case Cohort study
c. Retrospective cohort
d. Cross control cohort

[Ref: Conceptual Review of PSM, CBS Publishers, 3rd ed., p. 4]

Explanation: In this MCQ, there is a follow-up for 30,000 females for a period of 10 years and which makes this as a Cohort study, but also it is mentioned that 2000 females from the same study Cohort were used as controls to do the study and therefore, this study is a nesting of the case control study within the same Cohort which is technically called a nested case control study.

3. Which of the following is not correctly matched? ***(INI-CET MAY 2023)***

a. Systematic review—PRISMA
b. Diagnostic studies—CONSORT
c. Observational studies—MOOSE
d. Case report—CARE

[Ref: Conceptual review of PSM, CBS Publishers, 3rd ed., p. 187]

Explanation: CONSORT is done for Randomized control trials and not for diagnostic studies.

4. A study was conducted to find the association of aniline dye and bladder cancer. Study was done by comparing two groups of people working in aniline dye factory and those who are office workers of same factory using records of employment for past 20 years to assess the risk. What is the type of study? ***(NEET PG 2023)***

a. Retrospective cohort
b. Prospective cohort
c. Case control
d. Intervention and response

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 84]

Explanation: In retrospective Cohort (or historical cohort) study, the researcher goes back in time to select people with risk factor using previous employment or medical records.

5. A 10-year-old child in a school should be given which of the following vaccines? ***(NEET PG 2023)***

a. Td vaccine
b. Rota virus vaccine
c. Measles vaccine
d. Hepatitis B vaccine

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 136]

Explanation: National immunization schedule for infants and children 2020 states TT/Td for 10 years and 16 years, dose of 0.5 mL intramuscular in upper arm.

6. Which of the following options are correct? ***(INI-CET NOV 2022)***

1. VVM has a chemical indicator in the circle, which changes color
2. VVM gives an idea for number of days for expiry of vaccine
3. It is the only tool among all time temperature Indicators that is available at any time in the process of distribution and at the time a vaccine is administered at health center
4. It indicates whether the vaccine has been exposed to a combination of excessive heat over time and whether it is likely to have been damaged
5. VVM tells about the efficacy of the vaccine
6. The expiry date of the vaccine can be relaxed if the VVM is intact

a. 1, 2, 4 correct
b. 1, 3, 5 are correct
c. 3 and 4 are correct
d. All are correct

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 122]

ANSWER KEY

1. c	2. a	3. b	4. a	5. a	6. c

32. When we are investigating the relationship between steroid contraceptive and breast cancer, if the women taking these contraceptives are younger than those in the comparison group, they would be at a lower risk of breast cancer since this disease becomes common with increasing age. The age factor in this case is called:

a. Selection bias
b. Berksonian bias
c. Confounding factor
d. Interviewer bias

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 80]

Explanation: **Confounding factor:**

- Is present in both the groups to be assessed (but in unequal proportions).
- It is associated with both disease and the risk factor.

33. Best way to avoid known confounders is:

a. Standardization
b. Stratification
c. Regression
d. Matching

[Ref: Internet]

Explanation: **Treatment of known confounders**

- Matching
- Randomization

Treatment of unknown confounders

- Regression
- Randomization
- Standardization
- Stratification

34. Population at risk is used as denominator in calculation of:

a. Mortality rate
b. Incidence
c. Prevalence
d. Relative risk

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 68]

Explanation: **Incidence is given by the formula:**

$$\text{Incidence} = \frac{\text{Number of new cases of specific disease during a given time period}}{\text{Population at-risk during that period}} \times 1000$$

The point prevalence is given by the formula:

$$= \frac{\text{Number of all current cases (old and new) of a specified disease existing at a given point in time}}{\text{Estimated population at the same point in time}} \times 100$$

35. A village with 2000 population was surveyed for 1 year and 10 were found to be diseased. Assuming that the disease lasts for 2 years, annual prevalence is:

a. 10/4000 per 1000 population
b. 20/2000 per 1000 population
c. 10%
d. 0.5%

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 69]

Explanation: Prevalence: It is the total number of cases present (both old and new) in an area in a population.

In the MCQ, the total cases found in the survey = 10

Population under survey = 2000:

So, the prevalence is calculated as

$$\text{Prevalence} = \frac{\text{Total cases}}{\text{Population under surgery}} \times 100 = 0.5\%$$

Usually, the prevalence is expressed as a percentage (proportion) and incidence is expressed as rate per 1000 population per unit time.

36. What is not true about cross-sectional study?

a. Estimate for prevalence of disease
b. Confirms the etiology of disease
c. Evaluate the disease pattern in the community
d. Evaluate the association of risk factors

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 77]

Explanation: The etiology of the disease cannot be estimated by a cross-sectional study.

The causation of disease (or etiology) may be best measured by Cohort (follow-up) studies.

Cross-sectional study—salient features:

- Estimate for the prevalence of the disease
- Evaluation of the risk factors for the disease
- Assess the epidemiological determinants as pattern of disease—host factors, age groups and other related variables may be assessed.

37. For calculation of incidence, denominator is taken as:

a. Mid-year population
b. Population at risk
c. Total number of cases
d. Total number of deaths

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 68]

Explanation: Incidence is "*Number of new cases of a disease or new spells/ episodes of sickness occurring in a defined population during a specified period of time*".

$$\text{Incidence rate} = \frac{\text{Number of new cases of specific disease during a given time period}}{\text{Population at risk during that period}}$$

38. True regarding prevalence is:

a. Cannot be used to determine the health needs of a community
b. Independent of incidence
c. Independent of duration
d. Measures all cases

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 69]

Explanation: Prevalence measures all current cases (old and new) in a given population.

Uses of Prevalence

- Estimate magnitude of health/disease problem in the community and identify potential high-risk populations.
- Administrative and planning purposes, e.g., hospital beds, manpower needs, rehabilitation facilities, etc.

39. Age adjusted death rate is calculated for all; except:

a. To allow communities with different age structures to be compared
b. To allow comparison of both sexes
c. To allow comparison of different age in relation to injuries or accidents
d. To allow comparison of cancer prevalence in different strata

[Ref: Park's Textbook of Preventive and Social Medicine, 27th ed., p. 65]

Explanation: "Age adjusted death rate" removes confounding effect of different age structures in population and helps compare mortality. Adjustment can be made for age, sex, race, parity, etc.

ANSWER KEY

32. c	**33.** d	**34.** b	**35.** d	**36.** b	**37.** b
38. d	**39.** b				

OTOLARYNGOLOGY

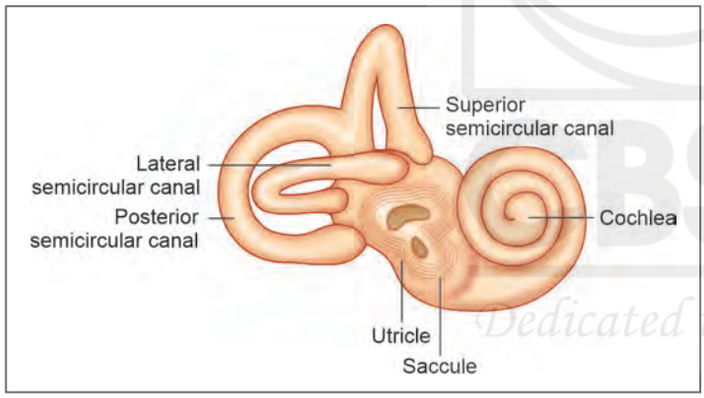
— *Dr Rajiv Dhawan*

SYNOPSIS

OTOLOGY

INNER EAR (LABYRINTH)

Basal turn of cochlea	Senses high frequency sounds 8000 Hz
Apex turn (Helicotrema)	Senses low frequency sounds 250 Hz



Parts of inner ear	Functions	Sensory end organs
Cochlea	Hearing	Organ of corti
Utricle and saccule	Linear balance	Macula
Semicircular canals	Angular balance	Crista

UTRICLE AND SACCULE (OTOLITHIC ORGANS)

Utricle	Horizontal linear balance.
Saccule	Vertical linear balance.

Benign Paroxysmal Positional Vertigo (BPPV)

- This disease is more common in females.
- **Etiology:** Otoconia reaches the semicircular canal (Most common is posterior SCC).
- **Chief complaint:** Vertigo for few seconds on changing head position. No hearing loss/tinnitus.
- **Diagnostic test of BPPV:** Dix Hallpike's Maneuver.
- **Treatment of BPPV:** Epley maneuver (particle repositioning maneuver).

Fitzgerald-Hallpike Bithermal Caloric Test

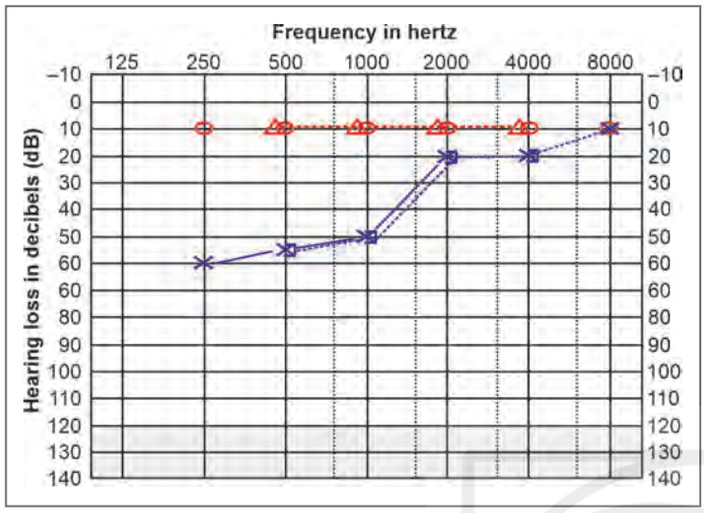
- This is a test for lateral SCC
  - With cold water stimulation, eyes move toward the opposite side.
  - With warm water stimulation, eyes move toward the same side. (COWS).

Auditory Pathway

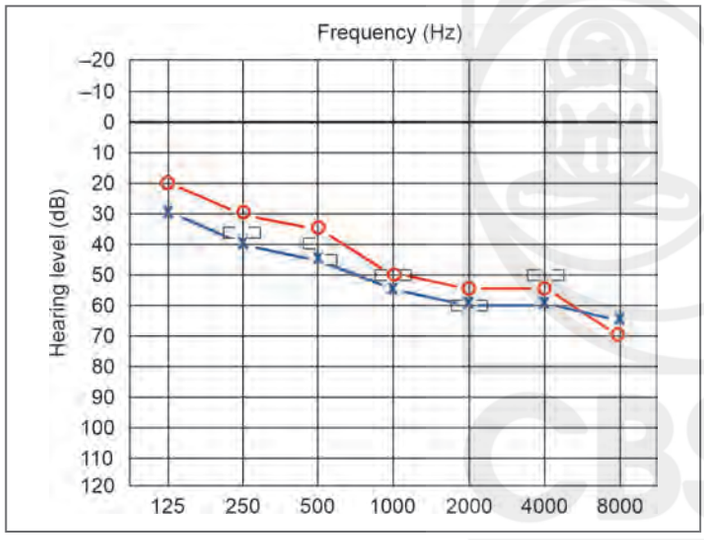
Mnemonics

- It mainly lies in the brainstem area.
  - **E**—Eighth nerve (spiral ganglion of 8th nerve in modiolus of Cochlea).
  - **C**—Cochlear nucleus.
  - **O**—Olivary complex (superior)—the site of cross over of information and sound localization.
  - **L**—Lateral lemniscus.
  - **I**—Inferior colliculus.
  - **M**—Medial geniculate body.
  - **A**—Auditory cortex.

Two Special Audiograms



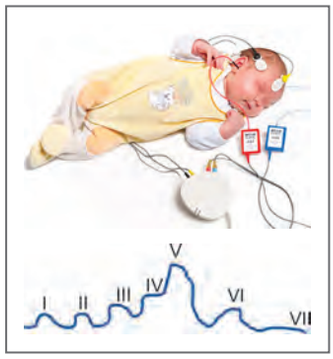
Meniere's Disease—Rising curve (Unilateral)



Presbyacusis—Sloping curve (Bilateral)

BRAINSTEM EVOKED RESPONSE AUDIOMETRY (BERA)

- **Principle:** We stimulate the ear with sound and record electrical activity from the auditory pathway (it lies mainly in brainstem area).
- BERA has 7 waves. (I to VII)
- The most important wave of BERA is wave V, it is produced by lateral lemniscus.

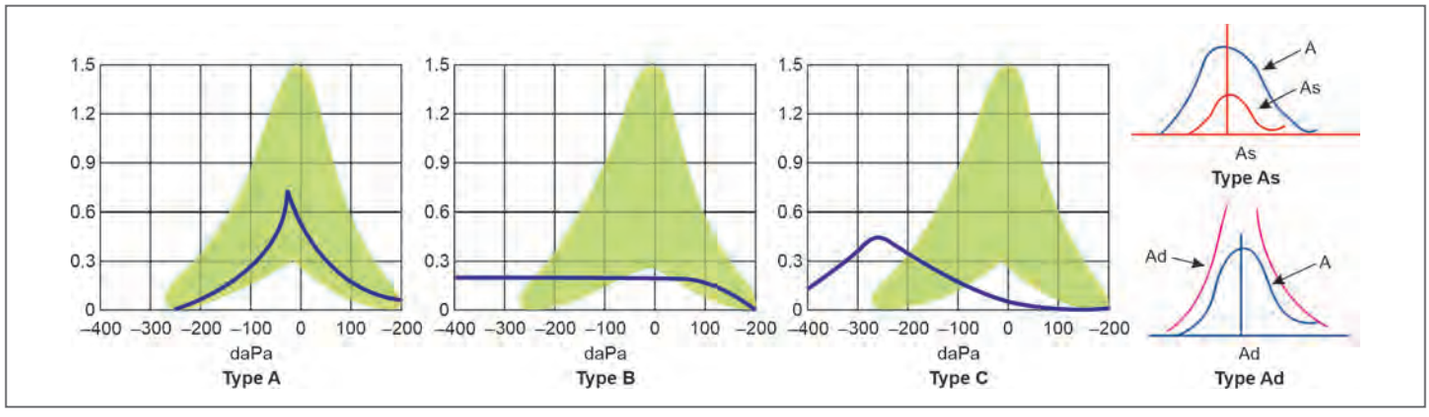


OTOACOUSTIC EMISSIONS (OAE)

- Emission means echoes.
- **Principle:** We give sound to ear and then we record echoes from outer hair cells of cochlea. These echoes are called Otoacoustic emissions.
- If echoes are recorded it means cochlea is working normally.

IMPEDANCE AUDIOMETRY (TYMPANOMETRY)

Type A	Normal
Type B	Flat curve seen in glue ear (or in perforated ear drum)
Type C	Seen in ET dysfunction or retracted tympanic membrane. This curve only comes on the negative side.
Type As	Seen in Otosclerosis. It is a low compliance curve.
Type Ad	Seen in ossicular dislocation. It is a high compliance curve (open ended curve).



Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Rajiv Dhawan

EAR

[Total Questions 337]

1. A 30-year-old female patient presents in the OPD with hearing loss in both ears since last 1 year. Investigations confirm the diagnosis of otosclerosis with more hearing loss on right side. Patient was advised to have Stapedotomy. Which of the following will be the tuning forks findings? ***(INI-CET NOV 2023)***

a. Right Rinne's positive and Weber lateralized to left ear
b. Right Rinne's negative and Weber lateralized to right ear
c. Left Rinne's positive and Weber lateralized to right ear
d. Left Rinne's negative and Weber lateralized to left ear

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 25]

Explanation: It is a case of bilateral conductive hearing loss with right being poor ear. In CHL, Rinne is negative and Weber is lateralized to poor ear.

2. A patient presents to the OPD with the complaint of hearing loss and can understand only shouted or amplified speech. What will be the degree of impairment according to the WHO classification of ability to understand speech? ***(INI-CET NOV 2023)***

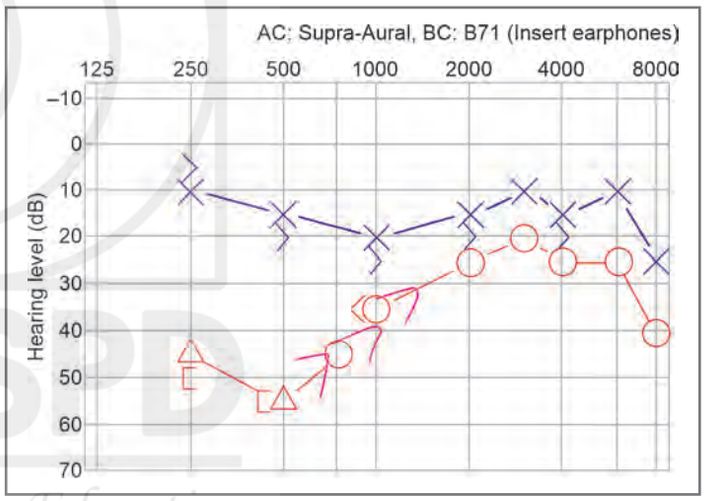
a. Mild hearing loss
b. Severe hearing loss
c. Profound deafness
d. Moderate hearing loss

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 44]

Explanation:

Grade of impairment	Corresponding audiometric ISO value (average of 500, 1000, 2000, 4000 Hz) of the better ear	Performance
No	25 dB or better	No or very slight hearing problems Able to hear whispers
Slight	26–40 dB	Able to hear and repeat words spoke in normal voice at 1 meter
Moderate	41–60 dB	Able to hear and repeat words using raised voice at 1 meter
Severe	61–80 dB	Able to hear some words when shouted into better ear
Profound	81 dB or greater	Unable to hear and understand even shouted voice

3. A patient presents to the OPD with the complaints of episodic vertigo which is sudden onset, and right sided sensorineural hearing loss (SNHL), and Tinnitus which lasts minutes to hours with accompanied nausea, vomiting and vagal symptoms. What is the diagnosis of the patient in accordance with the given audiogram? ***(INI-CET NOV 2023)***



a. Meniere's disease
b. BPPV
c. Acoustic neuroma
d. None

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 119]

Explanation: Meniere's disease is the most likely possibility which is mostly unilateral with low frequency SNHL in early stages with rising audiogram.

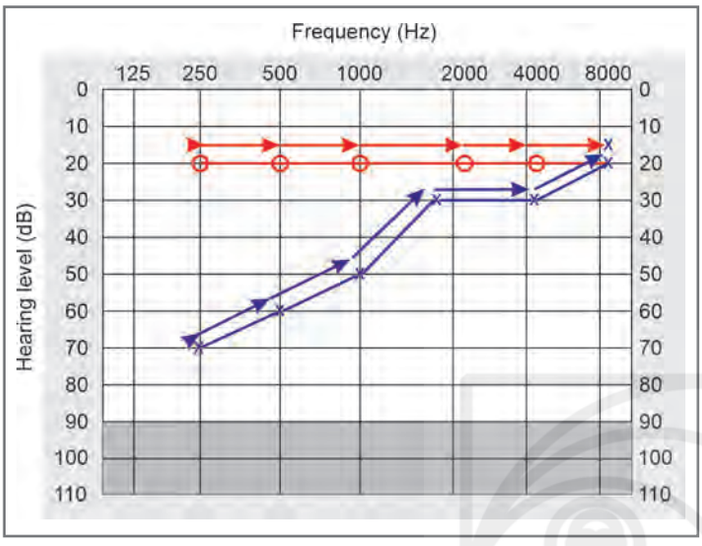
DID YOU KNOW?

Multiple quick revisions are better than single exhaustive revision.

ANSWER KEY

1. b **2.** b **3.** a

11. A patient presents to ENT OPD with the chief complaint of hearing loss. The pure tone audiometry has been done and the image shows the audiogram of patient. What will be the finding of Rinne and Weber test in this patient: ***(INI-CET NOV 2022)***



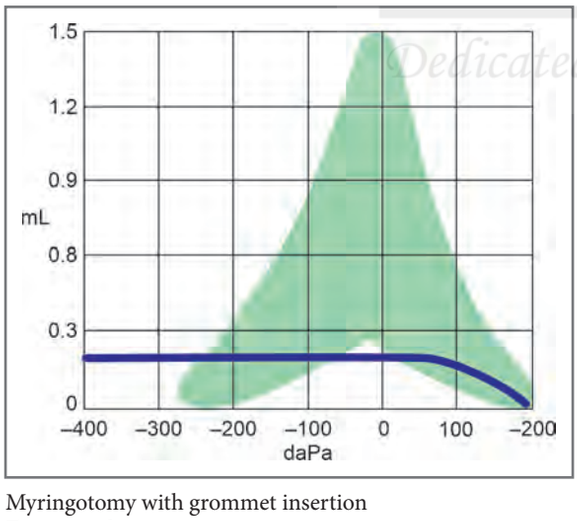
a. Right Rinnes negative, Weber lateralized to right ear
b. Left Rinnes positive, Weber lateralized to left ear
c. Right Rinnes positive, Weber lateralized to left ear
d. Left Rinnes positive, Weber lateralized to right ear

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 26]

Explanation: As per the given audiogram, patient is suffering from left sided SNHL and right has normal hearing.

Left ear is the poor ear. Hence, on left side Rinne should be positive (SNHL) and Weber should be lateralized to right ear (better ear).

12. A 6-year-old child has presented with hearing loss. On examination, there was high-arched palate with crowding of upper teeth. Tympanometry was done and the image of tympanogram is shown. Which of the following surgeries may be required in this patient? ***(INI-CET NOV 2022)***



a. Myringotomy with grommet insertion
b. Tympanoplasty
c. Grommet insertion with adenoidectomy
d. Adenoidectomy

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 77]

Explanation: This child is suffering from adenoid hypertrophy with glue ear as per the given Type B Tympanogram. The surgical management would need adenoidectomy with myringotomy/grommet insertion.

13. Arrange in sequence the pathway of production of OAE. ***(INI-CET NOV 2022)***

1. Outer hair cells
2. Basilar membrane
3. Ossicles
4. Oval window
5. Tympanic membrane
6. Perilymph

a. 1, 2, 3, 4, 5, 6
b. 5, 3, 4, 6, 2, 1
c. 5, 3, 4, 2, 6, 1
d. 5, 3, 4, 6, 1, 2

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 32]

Explanation: The otoacoustic emissions are produced by outer hair cells of cochlea once sound energy stimulates them. The pathway for the sound energy will be Tympanic membrane, ossicles, oval window, perilymph, basilar membrane to outer hair cells.

14. Which of the following is the appropriate match for various types of Wallerstein tympanoplasty? ***(INI-CET MAY 2022)***

a. Type 1 Tympanoplasty	1. Placing the graft on the incus
b. Type 2 Tympanoplasty	2. Placing the graft on the footplate of the stapes
c. Type 3 Tympanoplasty	3. Placing the graft on head of the stapes
d. Type 4 Tympanoplasty	4. Placing the graft on the malleus

a. a-4, b-1, c-3, d-2
b. a-3, b-2, c-4, d-1
c. a-4, b-3, c-1, d-2
d. a-2, b-1, c-3, d-4

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 473]

Explanation: Type 3 Tympanoplasty is also called Columella Tympanoplasty or Myringostapediopexy. Type 4 has round window shielding effect.

15. An image of tympanic membrane is given with retraction pocket. What is the grade of the retraction pocket? ***(INI-CET MAY 2022)***

a. Tos Grade I
b. Tos Grade II
c. Sade Grade III
d. Sade Grade II

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 66]

Explanation:

Grade (Tos)	Description
Grade 1	Mild retraction of attic, not touching the neck of malleus
Grade 2	Touching the neck of malleus
Grade 3	Limited erosion of outer attic wall
Grade 4	Severe erosion of outer attic wall

ANSWER KEY

11. d **12.** c **13.** b **14.** a **15.** a

349. A 27-year-old patient presents to ENT OPD with the complaint of headache and nasal blockage. The nasal endoscopy shows bilateral nasal polypi. The chest examination shows bilateral auscultatory wheezing. Which drug should this patient avoid? ***(NEET PG 2022)***

a. Gentamicin
b. Aspirin
c. Cetirizine
d. All of these

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 201-204, 203]

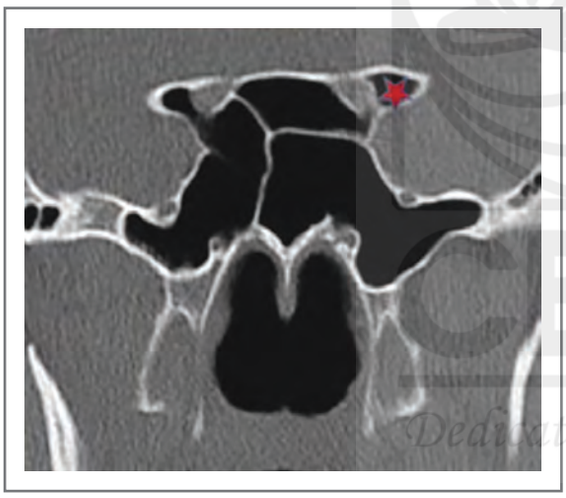
Explanation: It is Sampter's triad

350. A 49-year-old diabetic patient previously treated for COVID-19 few days ago presented with complaints of nasal obstruction, loosening of upper teeth and hemifacial pain. Which of the following tests is to be done on priority basis? ***(NEET PG 2022)***

a. Nasal swab for mucor
b. Serum ferritin
c. MRI nose and orbit with contrast
d. CECT nose and PNS

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 100]

351. Which ethmoid air cell has been marked with red star in the given CT scan image? ***(INI-CET NOV 2021)***



a. Onodi cell
b. Haller's cell
c. Concha bullosa
d. Agger nasi

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 159]

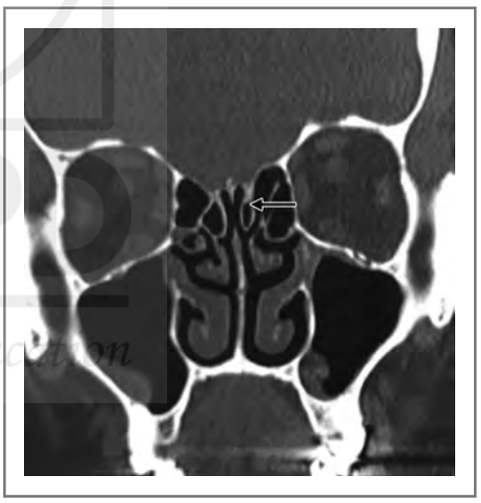
Explanation: Onodi cell is in close relation to optic nerve. It is visible in roof of sphenoid sinus.

352. A 50-year-old male patient has presented with left sided unilateral nasal mass and epistaxis. The radiological picture is given in the image. What is the most probable diagnosis? ***(INI-CET NOV 2021)***

a. Juvenile nasopharyngeal angiofibroma
b. Inverted papilloma
c. Maxillary carcinoma
d. Antrochoanal polyp

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 236, 237f, 524]

353. Identify the marked structure in the given CT scan. ***(INI-CET NOV 2021)***



a. Pneumatized superior turbinate
b. Agger nasi
c. Concha bullosa
d. Onodi cell

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 157]

354. Which of the following is not an olfactory test? ***(INI-CET NOV 2021)***

a. Arnold-stick test
b. CCSIT
c. UPSIT
d. Smell diskettes

[Ref: Diseases of Ear, Nose and Throat and Neck Surgery by PL Dhingra, 8th ed., p. 63]

ANSWER KEY

349. b	**350.** c	**351.** a	**352.** b	**353.** a	**354.** a

OPHTHALMOLOGY

— Dr Utsav Bansal

SYNOPSIS

ANATOMY OF EYE

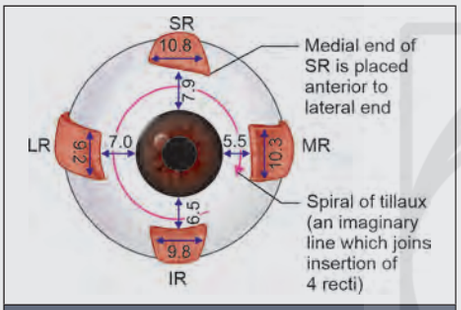
EMBRYOLOGY OF EYE

Various structures in the eye are formed from different germ layers as given:

Surface ectoderm	Neuroectoderm	Neural crest cells	Mesoderm
Skin of the eyelids	Optic nerve	Melanocytes	Extraocular muscles - 7
Epithelium of conjunctiva	Retina[Q]	Sclera[Q]	Connective tissue
Epithelium of cornea	Part of secondary vitreous	Ciliary muscle[Q]	Temporal part of Sclera
Tarsal glands	Epithelium of ciliary body	Stroma of iris and ciliary body	Endothelial lining of blood vessels
Lacrimal gland	Epithelium of iris	Sheaths of the optic nerve	
Crystalline **lens**[Q]	**Smooth muscles of iris**[Q] – dilator and sphincter pupillae	Bowman layer, stroma, descemet membrane of cornea	
		Trabecular meshwork	

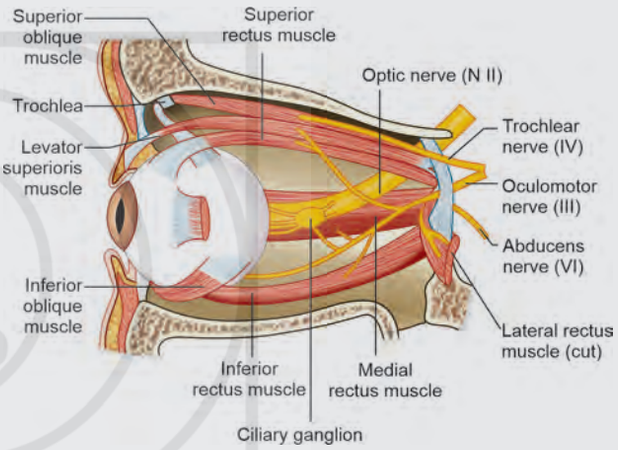
- Development of eye begins at the end of 3rd week of gestation, around **Day 22**
- **Retina** develops from the **optic cup** – Outer layer of cup forms the outermost layer of retina – Pigment epithelium and inner layer of optic cup forms the Neurosensory retina
- Anterior end of the **optic cup** differentiates into **epithelium of iris and ciliary body** and the smooth muscles of iris
- **Lens** is formed by the lens placode and the lens vesicle
- **Mesenchyme derived from neural crest** differentiates into a superficial fibrous layer forming sclera and cornea and deep vascular layer forming the Uveal tract
- Tunica vasculosa lentis – gives nourishment to lens during development.

	Recti	Superior oblique (SO)	Inferior oblique (IO)
Nerve Supply[Q]	SR[Q], MR[Q], IR[Q] – Oculomotor (III) nerve LR – Abducens[Q] (VI) nerve	Trochlear (IV)[Q] nerve	Oculomotor (III) nerve[Q]
Anatomically significant points	• MR is susceptible to injury during anterior segment procedures • LR originates by 2 heads • SR and MR are attached to the dural sheath of optic nerve at origin ↓ Leads to pain on upward and inward movement of the eyeball in RETROBULBAR neuritis	• The **longest**[Q] and the **thinnest** EOM • Trochlea is the FUNCTIONAL origin • Only muscle to be innervated on the outer surface of belly ↓ Retrobulbar anesthetic block is not effective	• The **shortest tendon** • The **shortest EOM**[Q] • Related to inferior vortex vein near its insertion



Recti: Tendon width and insertions in relation to limbus (all distances in mm)

SLIM – S > L > I > M



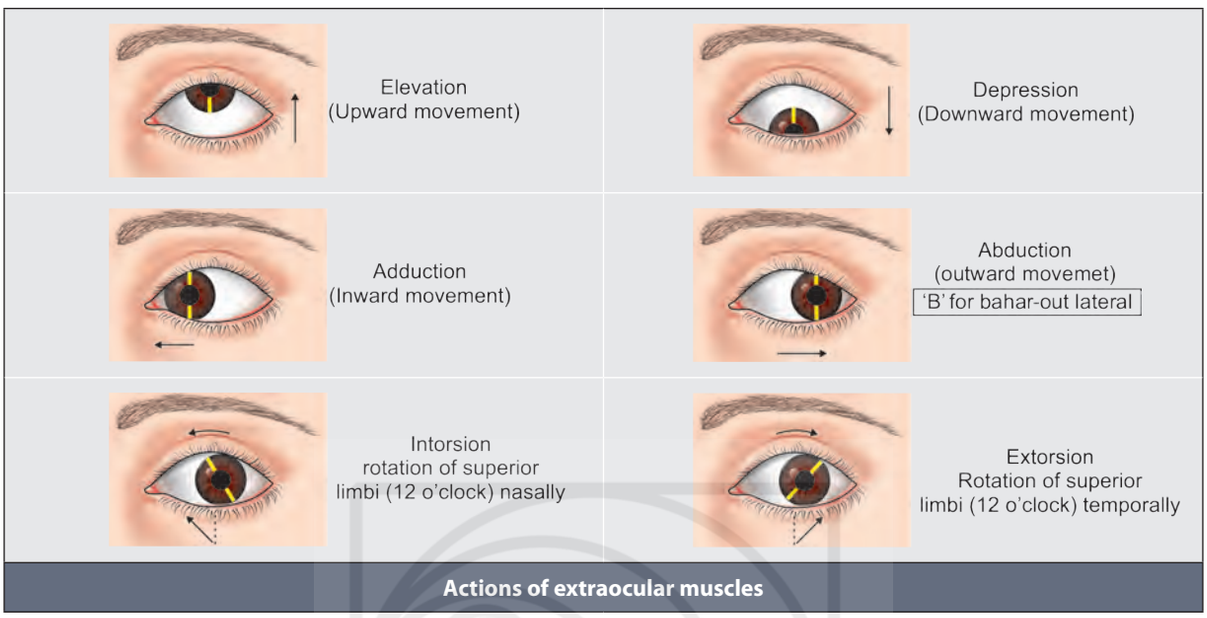
Actions of Extraocular Muscles

Actions of Extraocular Muscles in Primary Position

	1° (Primary)	2° (Secondary)	3° (Tertiary)
MR	ADDuction		
LR	ABDuction		
SR	Elevation	INtorsion	ADDuction
IR	Depression • Pure/maximum in 23° abduction	EXtorsion • Pure/maximum in 67° adduction	ADDuction
SO[Q]	INtorsion[Q]	Depression[Q]	ABDuction[Q]
IO	EXtorsion[Q] • Pure/maximum in 51° abduction • By anterior fibers of both obliques ↓ **1° actions of superior and inferior muscles more in ABduction**	Elevation[Q] • Pure/maximum in 39° adduction • By posterior fibers of both obliques ↓ **2° actions of superior and inferior muscles more in ADduction**	ABDuction

Mnemonic:

ABO SIN
AB : **AB**duction by **S** : **S**uperior muscles
O : **O**bliques **IN** : **IN**torters



Actions of extraocular muscles

Extra Mile

Tests for Stereopsis

- The two pencil test - for gross stereopsis
- Synoptophore
- **Titmus fly stereo test** uses 3D polaroid vectographic pictures
- **Random Dot Stereogram Test**
  - It eliminates use of mono-ocular clues to depth perception
  - Better test than titmus fly
  - Examples are as follows (see the images):

Titmus fly stereo test

TNO test

Frisby test

Lang test

Frisby Davis distance (FD2) Test

Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your **Preparation**

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | **Oh!** Still doubtful | **Oh No!** Wrong answer

Dr Utsav Bansal

ANATOMY AND PHYSIOLOGY OF EYE

[Total Questions 5]

1. Which of the following occurs when retina is exposed to light? ***(INI-CET NOV 2022)***

a. Depolarization, increase in neurotransmitter release
b. Depolarization, decrease in neurotransmitter release
c. Hyperpolarization, increase in neurotransmitter release
d. Hyperpolarization, decrease in neurotransmitter release

[Ref: Parsons' Diseases of Eye, 23rd ed., p. 20-21]

2. A man suffers blunt trauma to the eye following which he has dislocation of the lens. The lens is embryologically derived from which of the following structure? New Qs

a. Neuroectoderm
b. Surface ectoderm
c. Mesoderm
d. All of these

[Ref: Parsons' Diseases of Eye, 23rd ed., p. 7]

Explanation: The lens is derived from the surface ectoderm; thus option B is correct.

The surface ectoderm thickens at a specific point to form the lens placode. The lens placode invaginates inside, and forms the lens pit and subsequently the lens vesicle. This vesicle is responsible for development of lens. On day 33 of intrauterine life, the lens vesicle separates from the surface ectoderm and lies close to the optic cup.

Neuroectoderm: It forms the optic cup and its derivatives like the retina, pigment epithelium of the choroid or ciliary body, secondary and tertiary vitreous, etc.

Mesoderm: It forms the primary vitreous and other structures like choriocapillaris, extraocular tissue, vascular endothelium, etc.

3. A 10-year-old patient has been diagnosed with iris coloboma during routine ocular examination. What is the embryonic origin of uveal tissue? New Qs

a. Mesoderm
b. Ectoderm
c. Endoderm
d. Neural crest

[Ref: Parsons' Diseases of Eye, 23rd ed., p. 4]

Explanation: The **uveal tissue,** which includes the iris, ciliary body, and choroid, has its embryonic origin from the neural crest. The neural crest is a group of cells that arise from the neural tube during embryonic development and give rise to various structures in the body, including the uveal tissue of the eye.

Ectoderm gives rise to conjunctiva, cornea and lens.

Endoderm does not play a role in the development of eye.

4. A junior researcher is studying the visual pathway and the neurons involved in it. Which of the following is the third-order neuron in the optic pathway? New Qs

a. Photoreceptor cell
b. Bipolar cell
c. Ganglion cell
d. Lateral geniculate nucleus (LGN)

[Ref: Parsons' Diseases of Eye, 23rd ed., p. 28-29]

Explanation: The optic pathway consists of a series of neurons that transmit visual information from the retina to the brain.

The photoreceptor cells, specifically the rods and cones, are the first-order neurons in the optic pathway. They convert light signals into electrical signals and transmit them to the second-order neurons, which are the bipolar cells.

The bipolar cells receive input from the photoreceptor cells and relay the signals to the third-order neurons, which are the ganglion cells.

Ganglion cells are located in the innermost layer of the retina and their axons form the optic nerve. These ganglion cells carry the visual information from the retina to the brain.

- Photoreceptor cell is the first-order neuron
- Bipolar cell is the second-order neuron
- Lateral geniculate nucleus (LGN) is the fourth-order neuron.

5. Match the following structures of eye with their embryological derivatives. New Qs

Column-A	Column-B
1. Neural ectoderm	a. Temporal part of the sclera
2. Mesoderm	b. Crystalline lens
3. Neural crest	c. Retina
4. Surface ectoderm	d. Ciliary muscle

a. 1-a, 2-b, 3-c, 4-d
b. 1-c, 2-a, 3-d, 4-b
c. 1-c, 2-a, 3-b, 4-a
d. 1-d, 2-c, 3-b, 4-a

[Ref: Parsons' Diseases of Eye, 23rd ed., p. 4]

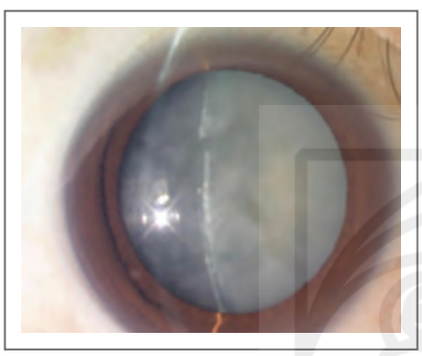
ANSWER KEY

1. d **2.** b **3.** d **4.** c **5.** b

Explanation: The given image is a Sturm's conoid. Configuration of rays refracted through a toric (regularly astigmatic) surface is known as Sturm's conoid.

Astigmatism is a refractive error in which the refraction varies in different meridians of eye, due to which light rays fail to converge in a point focus.

8. A 70-year-old patient presents with distant visual acuity of 6/18 which improved on pin hole testing. He gives history of not needing glasses for near vision now. On ocular examination findings as shown in image were seen. Patient has which of the following refractory error. ***(NEET PG 2023)***



a. Axial myopia
b. Curvatural myopia
c. Positional myopia
d. Index myopia

[Ref: Parsons' Diseases of the Eye, 23rd ed., p. 64]

Explanation: The most likely diagnosis based on the given clinical scenario and the image is index myopia seen in nuclear senile cataract.

Axial (MC Type)	Curvatural	Positional	Index
Axial length of eye ↓ 1 mm ↑ = 3 D myopia	Curvature of cornea or lens ↓ As curvature increases, so, radius of curvature decreases 1 mm ↓ = 6 D myopia	Position of lens ↓ Moves anteriorly	Refractive index of lens ↓ Increases
Associated with precocious growth in children causing simple/ school going myopia and buphthalmos (congenital glaucoma)	May be due to Keratoconus, Lenticonus or Spherophakia	Due to anterior subluxation of lens (as seen in Weill-Marchesani syndrome)	Seen in Nuclear cataract due to Sclerosis

9. Match the following ***(INI-CET NOV 2022)***

1. Color vision	a. Applanation tonometer
2. IOP	b. Ishihara chart
3. Peripheral vision	c. Tangent screen test
4. Central vision	d. Perimetry

a. 1-b, 2-a, 3-d, 4-c
b. 1-d, 2-b, 3-a, 4-c
c. 1-d, 2-c, 3-a, 4-b
d. 1-a, 2-c, 3-d, 4-b

[Ref: Parsons' Diseases of Eye, 23rd ed., p. 97, 108]

Explanation: Applanation tonometer is used to measure IOP. It is based on Imbert-Fick law, which states that the pressure inside an ideal dry, thin walled sphere equals the force necessary to flatten its surface divided by the area of the flattening.

$$P = F/A$$

Tangent screen used at 1 or 2 meters, it should have a uniform illumination of 7 foot-candles and it should be large enough to allow testing of the full 30° of central field.

10. A patient has presented for a routine eye evaluation. You have checked visual acuity on Snellen chart and found it to be 6/6. What is the minimum angle of resolution? ***(INI-CET NOV 2022)***

a. 15 minutes of arc
b. 5 minutes of arc
c. 10 minutes of arc
d. 20 minutes of arc

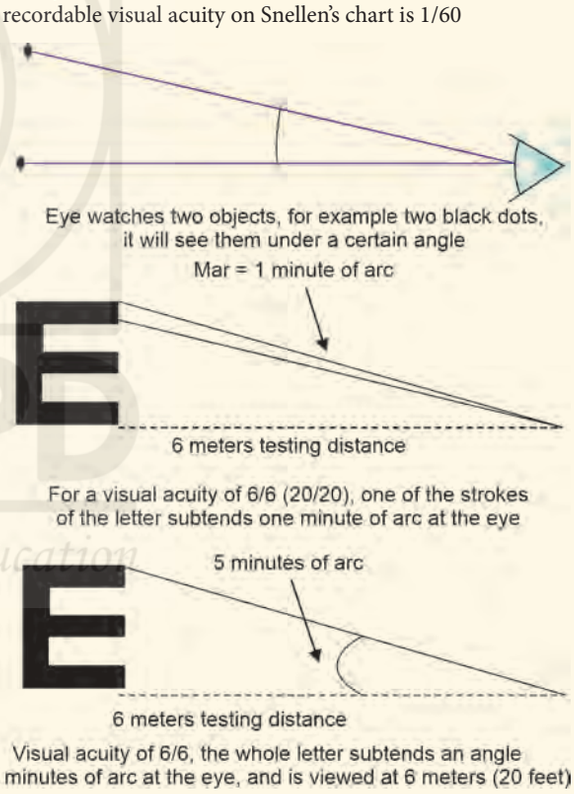
[Ref: Parsons' Diseases of Eye, 23rd ed., p. 84-89]

Explanation: Snellen chart consists of letters arranged in lines, with progressively diminishing size. Each letter subtends an angle of 5 minutes at the nodal point of eye when viewed from its respective distances. Each letter is so constructed that the width (of each stroke) subtends an angle of 1 minute = MAR

Normal visual acuity for far is 6/5

Best visual acuity for far is 6/3

Minimum recordable visual acuity on Snellen's chart is 1/60



11. A 15-year-old female with myopic astigmatism refuses to wear glasses; what would be the ideal management? ***(NEET PG 2021)***

a. LASIK
b. Femto LASIK
c. ICL
d. Spherical equivalent glasses

[Ref: Ophthalmology by Yanoff and Duker, 5th ed., p. 41]

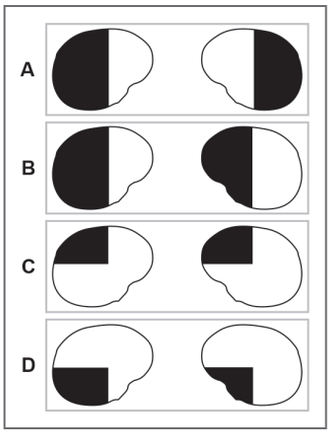
ANSWER KEY

8. d **9.** a **10.** b **11.** d

142. A 57-year-old man is brought to the emergency department following a generalized tonic-clonic seizure. His wife reports that he has no history of seizures. However, she says that he has been complaining of intermittent headaches, memory loss, and problems with his vision for the past 2 weeks. Brain imaging shows a solitary mass within the right temporal lobe. Which of the following visual field defects given in the image is most likely present in this patient? New Qs

a. C b. B
c. A d. D

[Ref: Kanski, 9th ed., p. 786]

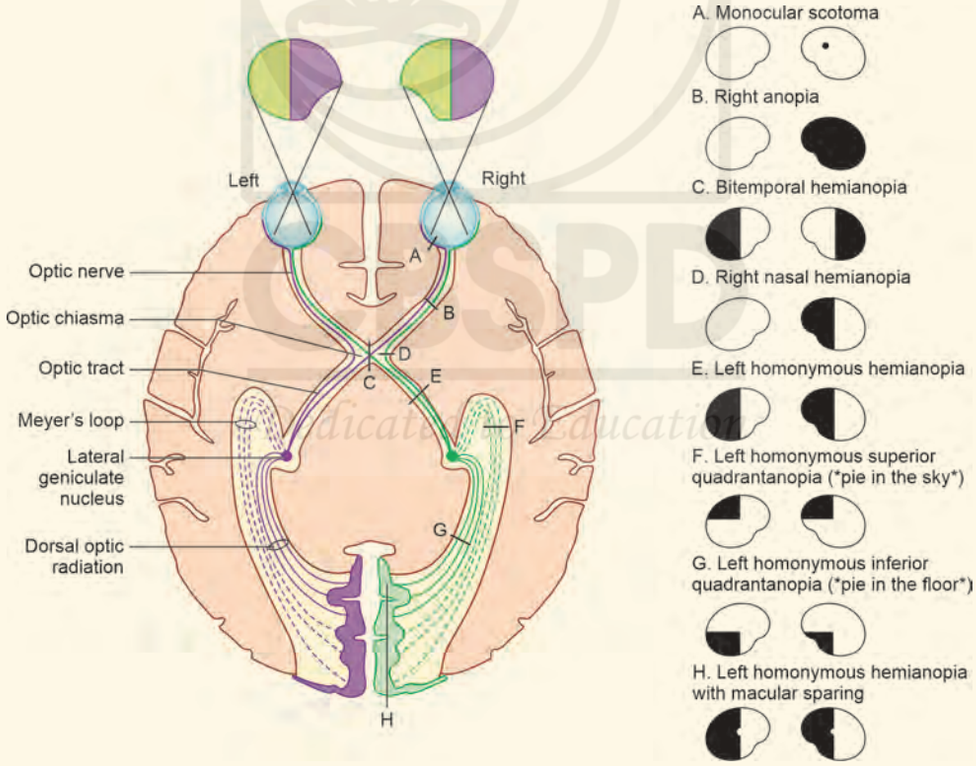


Explanation:

Damage to the visual pathway produces distinct types of visual field defects depending on the location of the lesion. Visual perception begins with light from the nasal visual fields striking the temporal side of each retina and light from the temporal visual fields striking the nasal side of each retina. Information from the retina is then transmitted by the optic nerves to the optic chiasm. At the optic chiasm, optic nerve fibers from the nasal half of each retina cross and project into the contralateral optic tract.

In contrast, nerve fibers from the temporal parts pass into the ipsilateral optic tract. The optic tract thus contains nerve fibers from the temporal part of the ipsilateral retina and the nasal part of the contralateral retina. Optic tract fibers project mainly to the lateral geniculate nucleus (LGN), but also project to superior colliculus (reflex gaze), pretectal area (light reflex), and the suprachiasmatic nucleus (circadian rhythms).

Axons from the LGN that project to the striate (primary visual) cortex are known as the optic radiation (or geniculocalcarine tract). The lower fibers of the optic radiation carry information from the lower retina (upper contralateral visual field) and take a circuitous route anteriorly into the temporal lobe (Meyer's loop) before reaching the lingual gyrus of the striate cortex. The upper fibers of the optic radiation carry information from the upper retina (lower contralateral visual field) and pass more directly from the LGN Reverse Color through the parietal lobe to reach the cuneus gyrus of the striate cortex.



Lesions in the temporal lobe can disrupt Meyer's loop and produce a contralateral superior quadrantanopia. Temporal lobe lesions can also produce other neurologic manifestations, including aphasia (dominant hemisphere lesions), memory deficits, seizures (complex partial and tonic-clonic), and hallucinations (auditory, olfactory, and visual).

ANSWER KEY

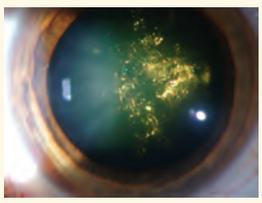
142. a

DID YOU KNOW?

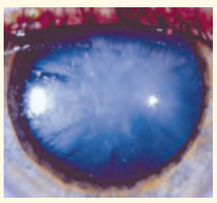
Creating your own mnemonics for eye muscle functions and nerve innervations can help you re-member tricky anatomy details more easily.

Explanation: The given clinical scenario and the given image are suggestive of an immature senile cataract and the management of this condition is phacoemulsification + posterior IOL implantation.

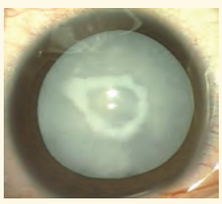
Types of Cataract



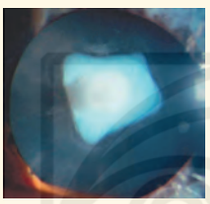
Polychromatic crystals in a **Christmas tree pattern**: Myotonic dystrophy



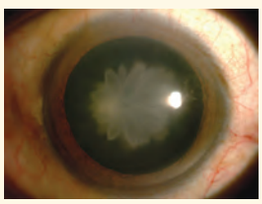
Snowflake cataract: Diabetes mellitus



Oil Droplet cataract: Galactosemia

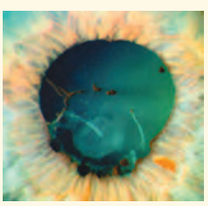


Shield cataract (anterior subcapsular cataract): Atopic dermatitis

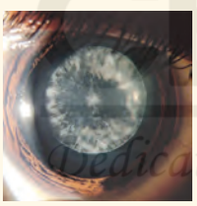


Rosette cataract: Blunt trauma

Sunflower cataract: Chalcosis/ Wilson's disease



Glassblowers cataract: Infrared radiation



Congenital lamellar (zonular) cataract: Hypoparathyroidism (Hypocalcemia) and Hypovitaminosis D

Nuclear cataract: Congenital rubella

ANSWER KEY

146. c **147.** a

146. Which of the following is not a feature of complicated cataract?
(INI-CET NOV 2022)

a. Polychromatic luster
b. Occurs after uveitis
c. Krukenberg spindle
d. Breadcrumb app

[Ref: Kanski's Clinical Ophthalmology, 9th ed., p. 381]

Explanation: **Krukenberg's spindle** (Pigment is deposited on the endothelium in a vertical spindle shape) is a feature of **pigmented glaucoma** not a features of complicated cataract.

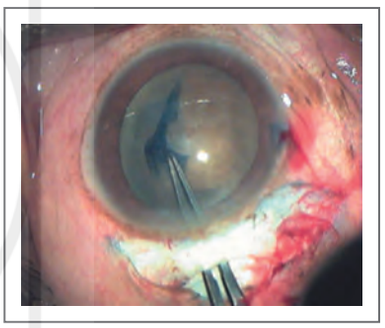
Complicated cataract occurs due to disturbances of lens nutrition secondary to chronic anterior uveitis (most common), high myopia, angle closure glaucoma and fundus dystrophies like retinitis pigmentosa.

Cataract occurs as posterior cortical atrophy in the axial region near the nodal point.

Present as posterior cortical/posterior subcapsular cataract.

Complicated cataract having breadcrumb appearance with polychromatic luster.

147. Identify the step which is given in the image.
(INI-CET NOV 2021)



a. Capsulorhexis
b. IOL implantation
c. Hydrodissection
d. Lens aspiration

[Ref: Kanski's Clinical Ophthalmology, 9th ed., p. 323-326]

Explanation:

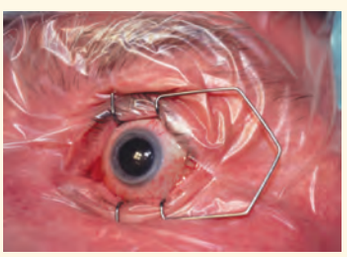
Capsulorhexis is the step shown in the given image.

Capsulorhexis is a method of anterior capsulotomy, where an opening is made in the anterior capsule of the lens. It is one of the steps involved in conventional extracapsular cataract extraction (ECCE).

Anterior capsulotomy can be done by one of three methods—can-opener technique, linear capsulotomy or envelope technique, or continuous curvilinear capsulorhexis.

Continuous curvilinear capsulorhexis (CCC), is considered to be superior to all the preexisting methods because when done correctly, it does not leave any edges or tears. Trypan blue dye can be used to stain the lens capsule for better visibility.

Hydrodissection is performed to separate the nucleus and cortex from the capsule so that the nucleus can be manipulated. A blunt cannula is inserted just beneath the edge of the capsulorhexis and fluid injected gently under the capsule.



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2 VOLUME SET

PART – B

SUBJECTS COVERED

07	**PEDIATRICS** *Dr Anand Bhatia*	09	**SURGERY** *Dr Rohan Khandelwal*
08	**MEDICINE** *Dr Mohammed Shakeel Sillat*	10	**OBSTETRICS AND GYNECOLOGY** *Dr Sakshi Arora Hans*

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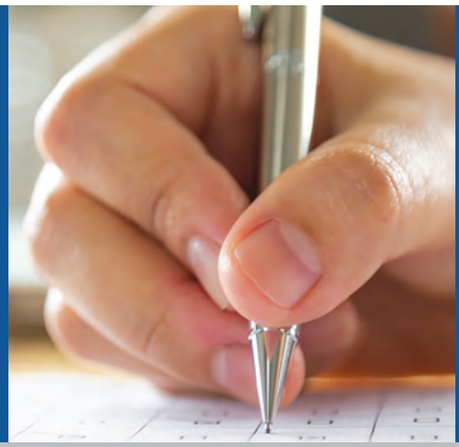

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Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	PEDIATRICS				
1.	**Growth and Development**	6	47	104	157
2.	**Nutrition and Malnutrition**	20	20	57	97
3.	**Genetic Disorder**	12	8	27	47
4.	**Neonatology**	27	51	96	174
5.	**Infectious Disease and Immunization**	21	2	136	159
6.	**Inborn Errors of Metabolism**	7	14	40	61
7.	**Fluids and Electrolytes**	2	12	11	25
8.	**Hematology**	9	1	10	20
9.	**Tumors/Oncology**	0	0	10	10
10.	**Cardiology**	15	3	53	71
11.	**Pulmonology**	13	7	56	76
12.	**Gastroenterology**	4	3	45	52
13.	**Hepatology**	2	0	5	7
14.	**Renal and Genitourinary/Nephrology**	7	6	29	42
15.	**Neurology**	12	26	75	113
16.	**Endocrinology**	3	3	15	21
17.	**Vaccine**	13	13	19	45
18.	**Musculoskeletal System**	0	0	14	14
	Total Qs	**173**	**216**	**802**	**1191**
	MEDICINE				
1.	**General Medicine**	**61**	**18**	**25**	**104**
	Acid-Base Disorders	17	10	7	34
	Fluids and Electrolytes Imbalance	15	4	16	35
	Disorders of Temperature Regulation	1	3	1	5
	Critical Care and Emergency Medicine	13	1	1	15
	Toxicology	9	0	0	9
	Nutrition	3	0	0	3
	Miscellaneous	3	0	0	3

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
2.	**Infectious Diseases**	**82**	**36**	**23**	**141**
	Acute Febrile Illnesses	10	10	1	21
	HIV Infection and Aids	13	4	5	22
	Tuberculosis	4	6	3	13
	COVID-19	10	1	0	11
	Infections of the CNS	7	1	1	9
	Pulmonary Infections	6	0	1	7
	Acute Rheumatic Fever and Infective Endocarditis	7	3	1	11
	Viral Hepatitis	10	3	9	22
	Intra-Abdominal and Entericinfections	5	3	2	10
	Genitourinary Tract Infections	2	0	0	2
	Miscellaneous	8	5	0	13
3.	**Neurology**	**69**	**33**	**53**	**155**
	Neurological Examination	5	3	2	10
	Primary Headache	4	2	1	7
	Seizures and Epilepsy	3	0	7	10
	Cerebrovascular Diseases	17	8	17	42
	Dementia	5	0	2	7
	Parkinson's Disease	2	3	1	6
	Movement Disorders	3	0	3	6
	Demyelinating Disorders of the CNS	4	2	3	9
	Motor Neuron Diseases	2	4	0	6
	Ataxic Disorders	0	2	1	3
	Cranial Nerve Disorders	3	0	0	3
	Diseases of the Spinal Cord	10	0	2	12
	Peripheral Neuropathy	0	0	2	2
	Immune Mediated Neuropathies	3	4	3	10
	Diseases of the Neuromuscular Junction	5	5	4	14
	Myopathies and Muscular Dystrophies	0	0	2	2
	Miscellaneous	3	0	3	6
4.	**Cardiovascular System**	**64**	**31**	**57**	**152**
	Physical Examination	13	0	11	24
	Electrocardiography	7	9	16	32
	Bradyarrhythmias	1	0	1	2
	Tachyarrhythmias	11	2	7	20

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	Heart Failure	7	1	0	8
	Cardiomyopathy and Myocarditis	3	1	7	11
	Valvular Heart Diseases	5	1	2	8
	Congenital Heart Diseases in the Adults	2	1	0	3
	Pericardial Diseases	0	3	1	4
	Ischemic Heart Disease	1	2	1	4
	Acute Coronary Syndrome	5	8	6	19
	Hypertension and Renovascular Diseases	6	0	1	7
	Diseases of the Aorta	2	1	3	6
	Miscellaneous	1	2	1	4
5.	**Respiratory System**	**23**	**29**	**43**	**95**
	Pulmonary Function Testing	7	5	2	14
	Obstructive Airway Diseases	4	12	8	24
	Interstitial Lung Diseases and Hypersensitivity Pneumonitis	1	4	5	10
	Cystic Fibrosis	2	0	3	5
	Occupational and Environmental Lung Diseases	2	0	1	3
	Ards and Respiratory Failure	1	2	5	8
	Diseases of the Pleura and Mediastinum	3	1	5	9
	DVT and Pulmonary Embolism	2	2	5	9
	Pulmonary Hypertension	1	3	0	4
	Sleep Apnea and Hypoventilation Syndromes	0	0	5	5
	Miscellaneous	0	0	4	4
6.	**Gastrointestinal System**	**6**	**28**	**38**	**72**
	Diseases of the Esophagus	0	11	11	22
	Peptic Ulcer Disease	2	3	7	12
	Malabsorption Syndromes	2	3	8	13
	Acute and Chronic Diarrhea	0	0	3	3
	Inflammatory Bowel Disease	2	9	8	19
	Irritable Bowel Syndrome	0	2	1	3
7.	**Hepatobiliary System**	**9**	**22**	**35**	**66**
	Evaluation of Liver Function	3	1	3	7
	Bilirubin Metabolism and Hyperbilirubinemia	0	0	3	3
	Toxin and Autoimmune Hepatitis	0	2	5	7
	Alcoholic and Nonalcoholic Liver Diseases	1	3	2	6

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	Cirrhosis and its Complications	4	10	14	28
	Liver Transplantation	1	0	1	2
	Acute and Chronic Pancreatitis	0	3	4	7
	Miscellaneous		3	3	6
8.	**Nephrology**	**15**	**30**	**51**	**96**
	Urinary Abnormalities	1	2	2	5
	Acute Kidney Injury	0	0	2	2
	Chronic Kidney Diseases	2	1	2	5
	Dialysis and Transplantation	1	0	7	8
	Glomerular Syndromes	7	14	27	48
	Polycystic Kidney Diseases and Tubular Diseases	0	3	4	7
	Tubulointerstitial Diseases	0	2	3	5
	Nephrolithiasis	1	3	0	4
	Hereditary Nephropathies	2	5	4	11
	Miscellaneous	1	0	0	1
9.	**Endocrinology and Metabolism**	**43**	**28**	**57**	**128**
	Pituitary and Hypothalamus	8	4	13	25
	Thyroid Gland	6	2	13	21
	Parathyroid Gland	1	2	2	5
	Adrenal Cortex	3	6	5	14
	Pheochromocytoma and Polyglandular Syndromes	2	2	7	11
	Diabetes Mellitus	12	4	6	22
	Obesity and Metabolic Syndromes	6	0	0	6
	Metabolic Bone Diseases	2	2	0	4
	Metabolic Disorders	3	6	7	16
	Miscellaneous	0	0	4	4
10.	**Hematology**	**59**	**25**	**79**	**163**
	Hypoproliferative Anemia	11	0	2	13
	Hemoglobinopathies	5	2	5	12
	Macrocytic Anemia	3	0	3	6
	Hemolytic Anemia	5	3	8	16
	Bone Marrow Failure Syndromes	4	4	5	13
	Myeloproliferative Neoplasms	0	3	7	10
	Acute and Chronic Leukemia	11	11	10	32

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	Hodgkin and Non-Hodgkin Lymphoma	6	2	15	23
	Plasma Cell Disorders	4	0	6	10
	Transfusion Medicine	2	0	6	8
	Disorders of Hemostasis	6	0	10	16
	Miscellaneous	2	0	2	4
11.	**Rheumatology**	**31**	**21**	**34**	**86**
	Rheumatoid Arthritis and Osteoarthritis	5	4	9	18
	Crystal Associated Arthropathies	2	0	7	9
	Axial and Peripheral Spondyloarthritis	3	5	1	9
	Systemic Lupus Erythematosus and Antiphospholipid Syndrome	4	0	6	10
	Systemic Sclerosis and Sjögren Syndrome	3	3	1	7
	Inflammatory Myopathies	1	3	0	4
	Vasculitis Syndromes	6	1	6	13
	Sarcoidosis	3	4	2	9
	Miscellaneous	4	1	2	7
	Total Qs	**462**	**301**	**495**	**1258**
	SURGERY				
1.	**General Surgery**	28	21	87	136
2.	**Trauma**	32	25	58	115
3.	**Oral Cavity and Malignancy**	14	20	35	69
4.	**Thyroid**	18	19	18	55
5.	**Breast**	23	20	43	86
6.	**Hernia**	10	15	21	46
7.	**Gastrointestinal Tract**	55	40	37	132
8.	**Hepatology**	43	15	24	82
9.	**Urology**	41	15	17	73
10.	**Cardiothoracic Vascular Surgery**	27	20	54	101
11.	**Plastic Surgery**	3	25	26	54
12.	**Endocrine Surgery**	7	21	3	31
13.	**Pediatric Surgery**	1	9	22	32
14.	**Neurosurgery**	7	10	21	38
15.	**Oncosurgery**	6	10	22	38
16.	**Transplant Surgery**	3	15	20	38
17.	**Miscellaneous**	0	15	6	21
	Total Qs	**318**	**315**	**514**	**1147**

Sl. no.	Subjects Covered	5 Years Recall Qs	Frequently asked Qs	New Qs	Total Qs
	OBSTETRICS AND GYNECOLOGY				
1.	**Obstetrics**	**160**	**166**	**200**	**526**
	Anatomy and Physiology of Reproductive Organs	14	11	14	39
	Placenta Physiology and Amniotic Fluid	5	7	16	28
	Diagnosis of Pregnancy	10	17	8	35
	Antenatal Assessment and Fetal Well-Being	17	19	18	54
	Obstetric Complications in Pregnancy	23	24	25	72
	Medical and Surgical Disorder in Pregnancy	32	13	28	73
	Infection in Pregnancy	8	4	11	23
	Drug, Vaccine and Teratogens in Pregnancy	4	8	8	20
	Fetal Skull and Maternal Pelvis	4	18	9	31
	Normal and Abnormal Labor	37	24	45	106
	Normal and Abnormal Puerperium	3	17	7	27
	Miscellaneous Topics	3	4	11	18
2.	**Gynecology**	**124**	**107**	**220**	**451**
	Disorders of Menstruation	25	20	44	89
	Common Conditions in Gynecology	27	28	48	103
	Benign Conditions in Gynecology	23	13	25	61
	Infections in Gynecology	12	15	33	60
	Urinary and Intestinal Tract in Gynecology	2	4	8	14
	Gynecological Malignancies	25	26	51	102
	Imaging Modalities, Endoscopic Procedures and Major and Minor Operations in Gynecology	10	1	11	22
	Total Qs	**284**	**273**	**420**	**977**

MOST RECENT QUESTIONS

[NEET PG 2024 AND INI-CET MAY 2024]

Sl. no.	Subjects Covered	Total Qs
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8.	**MEDICINE**	92
9.	**SURGERY**	60
10.	**OBSTETRICS AND GYNECOLOGY**	61

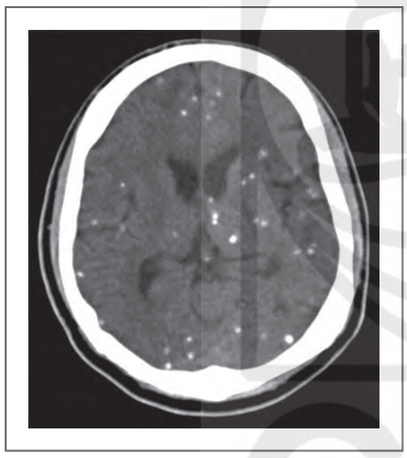
Most Recent Questions

[NEET PG 2024 and INI-CET MAY 2024]

PEDIATRICS

NEET PG 2024

1. A 3-month-old baby is brought with intracranial diffuse calcifications, chorioretinitis and hydrocephalus. What is the most likely diagnosis?



a. Toxoplasmosis
b. CMV
c. Zika virus
d. Rubella

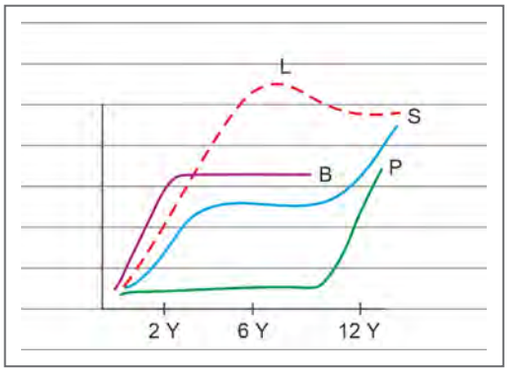
[Ref: Nelson, 21st ed., Chapter 316]

2. At what pressure, pop valve is released in bag and mask ventilation?

a. 30-40 cm of H_2O
b. 40-50 cm of H_2O
c. 50-60 cm of H_2O
d. 60-70 cm of H_2O

[Ref: Nelson, 21st ed., Chapter 121]

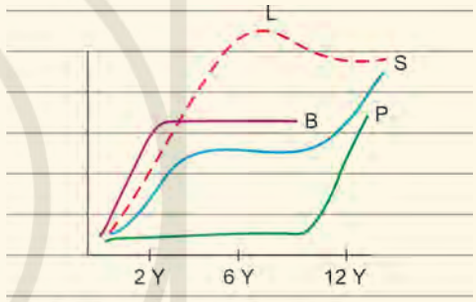
3. Maximum lymphoid growth is seen at what age?



a. 2 years
b. 6 years
c. 10 years
d. 14 years

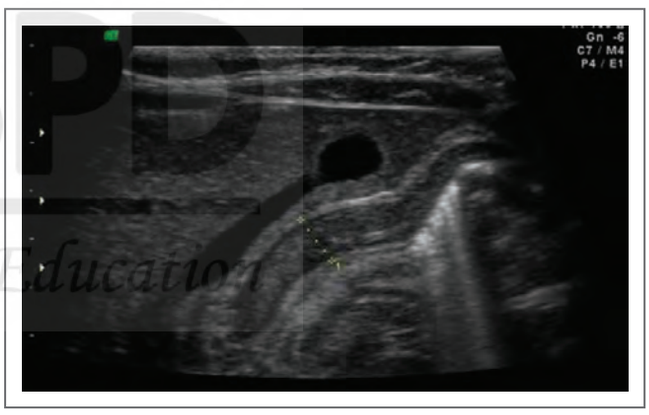
[Ref: Nelson, 21st ed., Chapter 20]

Explanation:



Lymphoid growth max at 6 years
Brain growth max at 2 years
Puberty growth at 12 years
Somatic growth max at 12 years

4. A 1-month-old baby with olive shape mass and recurrent vomiting. USG was done which is shown below. What is your diagnosis?



a. CHPS
b. Intussusception
c. Meckels diverticulum
d. None of the above

[Ref: Nelson, 21st ed., Chapter 355]

ANSWER KEY

PEDIATRICS

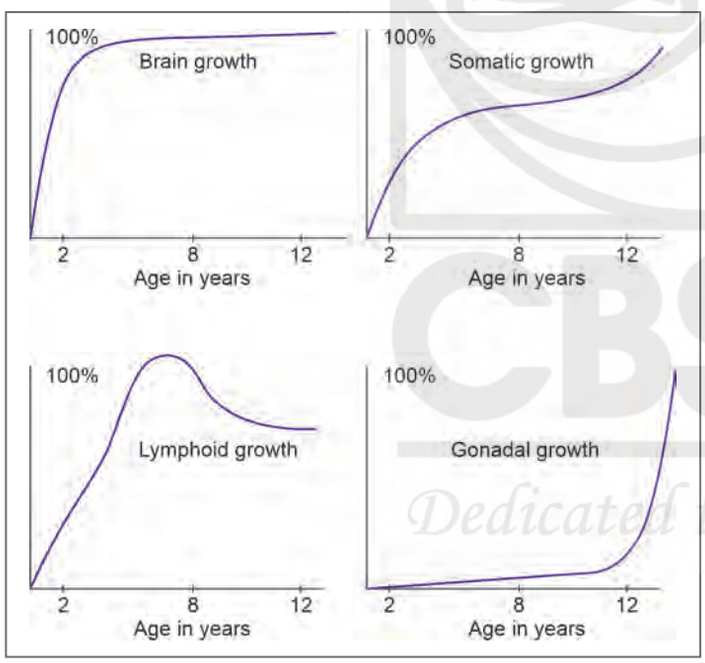
1. a **2.** a **3.** b **4.** a

PEDIATRICS

— *Dr Anand Bhatia*

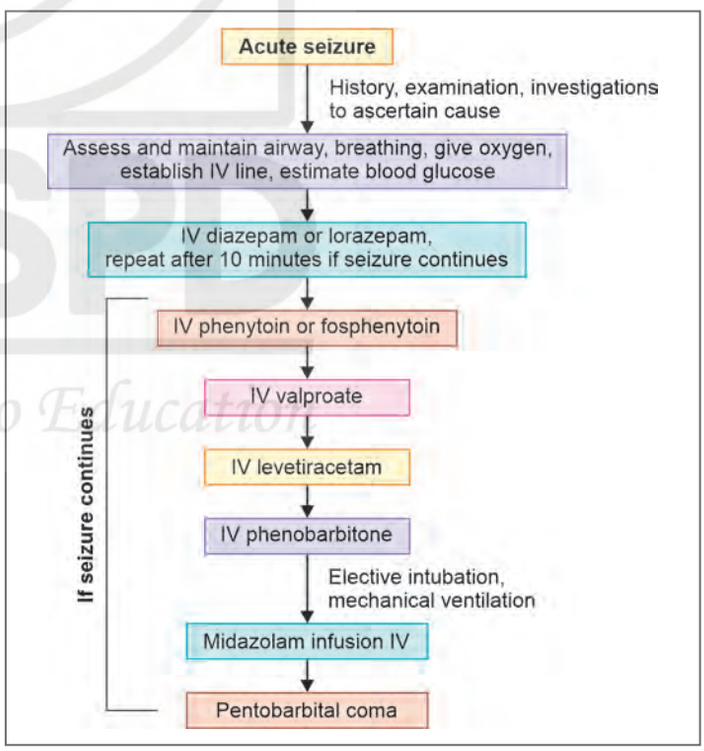
SYNOPSIS

RATES OF GROWTH OF DIFFERENT TISSUES AND ORGANS

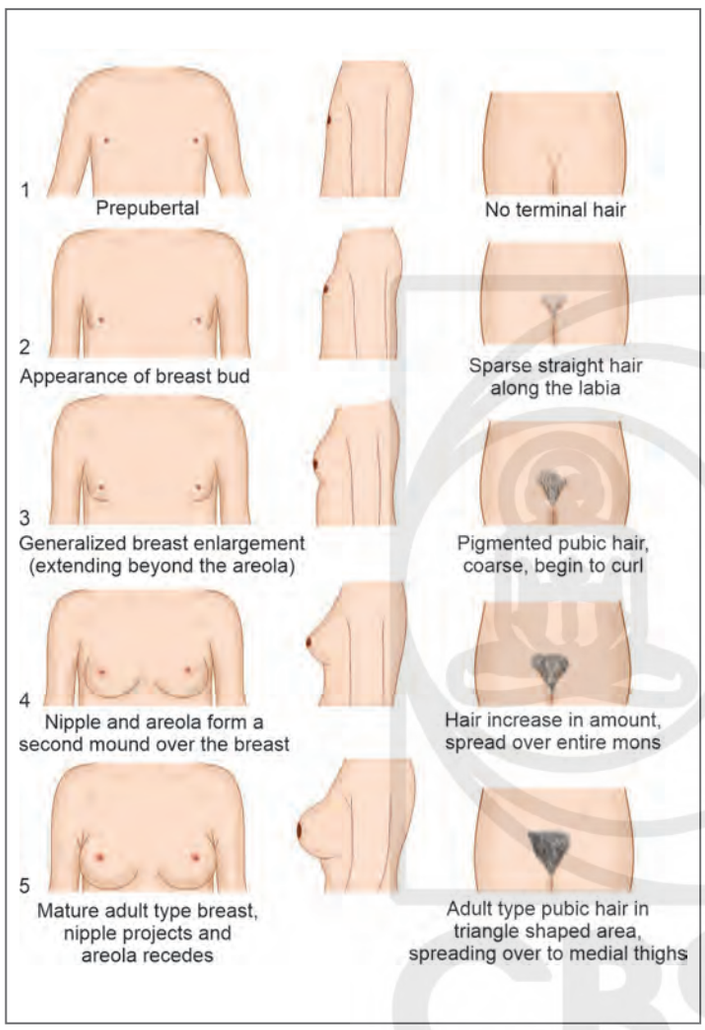


MANAGEMENT OF STATUS EPILEPTICUS

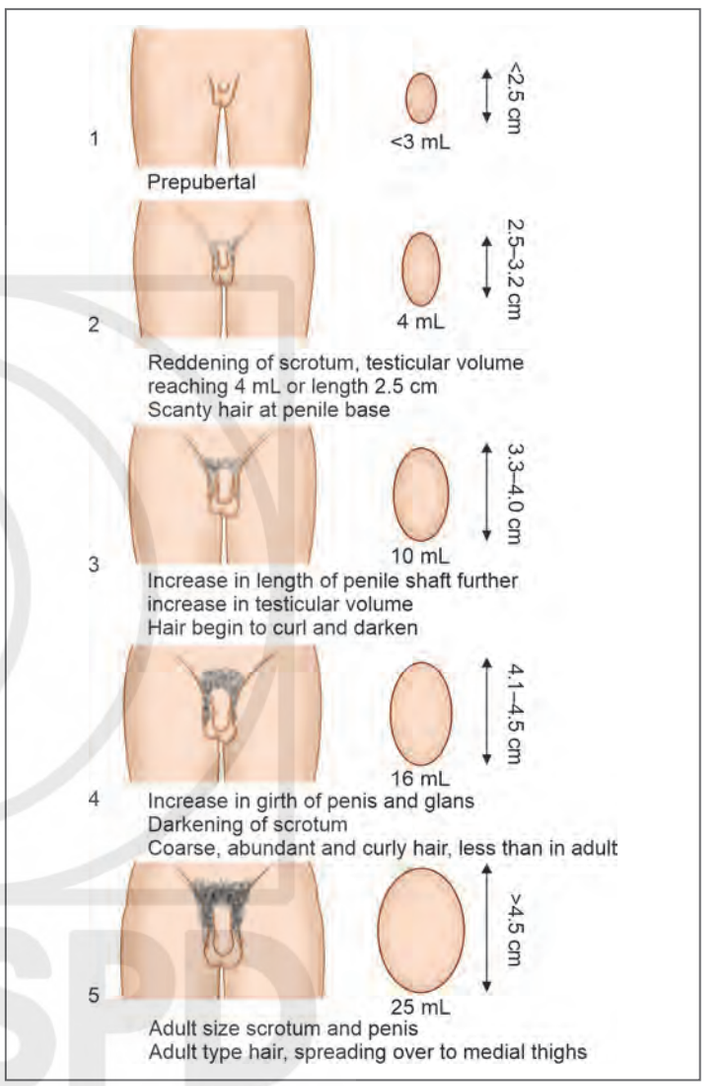
Following initial assessment, patients need to be treated with anticonvulsants. If required, more than one agent may be administered sequentially. Patients should be monitored for respiratory difficulty and might need assisted ventilation.



SEXUAL MATURITY RATING (1–5) IN GIRLS



SEXUAL MATURITY RATING (1–5) IN BOYS



MAINTENANCE FLUID REQUIREMENT IN HEALTHY CHILDREN

Body weight	Per day	Per hour
0–10 kg	100 mL/kg	4 mL/kg
10–20 kg	1000 mL for first 10 kg + 50 mL/kg for each kg beyond 10 kg	40 mL + 2 mL/kg for each kg beyond 10 kg
>20 kg	1500 mL + 20 mL/kg for each kg beyond 20 kg	60 mL + 1 mL/kg for each kg beyond 20 kg

CLINICAL ASSESSMENT OF DEHYDRATION

Assessed for	No dehydration	Some dehydration	Severe dehydration
Decrease in body weight	<5% in infants; <3% in older children	5–10% in infants; 3–6% in older children	>10% in infants; >6% in older children
Mental status	Normal	Irritable	Lethargic to comatose
Thirst	Normal	Increased	Unable to drink
Skin color and elasticity (turgor)	Normal	Cool, pale; mild delay in turgor	Cold, mottled; tenting

Contd...

Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your **Preparation**

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | **Oh!** Still doubtful | **Oh No!** Wrong answer

Dr Anand Bhatia

GROWTH AND DEVELOPMENT

[Total Questions 157]

1. HEADSS is used for: ***(INI-CET NOV 2023)***

a. Infants
b. 0–5 years
c. 5–10 years
d. Adolescents

[Ref: Nelson, 21st ed., p. 820]

2. Handedness is usually determined by the age of: ***(INI-CET NOV 2022)***

a. 1 year
b. 2 years
c. 3 years
d. 4 years

[Ref: Nelson, 21st ed., p. 1157]

3. Alternate way to measure height in a 4-year-old child is: ***(INI-CET NOV 2022)***

a. Head circumference
b. Knee height
c. Crown-rump length
d. Arm span

[Ref: Nelson, 21st ed., p. 1183]

4. Method of measurement of height in 4 years: ***(INI-CET NOV 2022)***

a. Infantometer
b. Stadiometer
c. Harpenden caliper
d. None of these

[Ref: Nelson, 21st ed., p. 1182]

5. Match the following according to the developmental milestones of different age group of infants: ***(INI-CET NOV 2021)***

1. Social smile	A. 1–2 months
2. Pincer grasp	B. 5–6 months
3. Walks 1–2 steps	C. 9–1 months
4. Transfer objects	D. 12–13 months

a. 1A 2C 3D 4B
b. 1C 2A 3D 4B
c. 1A 2C 3B 4D
d. 1B 2A 3C 4D

[Ref: Nelson, 21st ed., p. 22]

6. Bidextrous grip is seen at what age? ***(NEET PG 2019)***

a. 4 months
b. 5 months
c. 6 months
d. 7 months

[Ref: Nelson, 21st ed., p. 1105]

7. Which of the following is considered developmental delay in a 3-year-old child?

a. Unable to copy square
b. Unable to use spoon
c. Unable to hop on one foot
d. Unable to catch ball properly

[Ref: Nelson, 21st ed., p. 1150]

8. A child came to the emergency with a history of ingestion of button battery, on X-ray it was found in the stomach. What is the next step?

a. Endoscopic removal of battery
b. Wait and watch
c. Repeat X-ray after 5 days
d. Immediate laparotomy

[Ref: Nelson, 21st ed., p. 2545]

9. Which of the following fontanel is the last to close?

a. Posterior fontanel normally
b. Anterior fontanel
c. Mastoid fontanel
d. Sphenoidal fontanel

[Ref: Nelson, 21st ed., p. 3766]

10. The milestones of a 3-year-old child are considered delayed if he is unable to:

a. Hop on one foot
b. Use spoon effectively
c. Copy a square
d. Reliably catch a ball

[Ref: Nelson, 21st ed., p. 1124]

11. What is the drug of choice for precocious puberty in girls?

a. GnRH analogs
b. Cyproterone acetate
c. Danazol
d. Medroxyprogesterone acetate

[Ref: Nelson, 21st ed., p. 11359]

12. A 6-year-old male child comes with complaints of bedwetting. The child is continent during the day and the problem is only at night. Growth and development of the child were normal. Urine microscopy is normal and urine specific gravity is 1.020. How will you manage?

a. Reassure the parents and follow-up after 6 months
b. Refer to psychiatrist
c. Complete blood counts
d. Ultrasound–KUB

[Ref: Nelson, 21st ed., p. 11044]

ANSWER KEY

1. d	**2.** c	**3.** d	**4.** b	**5.** a	**6.** a
7. b	**8.** a	**9.** b	**10.** b	**11.** a	**12.** a

54. A 6-month-old infant is brought to the clinic for a routine check-up. On examination, the head circumference is found to be significantly smaller than the 3rd percentile, while the height and weight are at the 50th percentile. The infant demonstrates irritability and increased muscle tone. Which of the following conditions is most likely associated with these clinical findings? New Qs

a. Microcephaly
b. Hydrocephalus
c. Down syndrome
d. Prader-Willi syndrome

[Ref: Nelson, 21st ed., p. 1695]

Explanation: **Option a:** The combination of a significantly small head circumference, normal height and weight, along with irritability and increased muscle tone, is indicative of microcephaly

55. A 2-month-old infant is brought to the pediatrician for a routine examination. On palpation, the physician identifies a soft spot on the infant's skull located at the intersection of the frontal and parietal bones. Which of the following terms best describes the precise location of this soft spot in the infant's skull? New Qs

a. Bregma
b. Lambda
c. Asterion
d. Pterion

[Ref: Nelson, 21st ed., p. 2551]

56. A 3-year-old boy is brought to the clinic due to concerns about his growth and development. Physical examination reveals macrocephaly, a prominent jaw, and a pointed chin. His height and weight are both above the 97th percentile for his age, and he has advanced bone age. The child's developmental milestones are appropriate for his age. Which of the following is the most likely diagnosis? New Qs

a. Sotos syndrome
b. Marfan syndrome
c. Beckwith-Wiedemann syndrome
d. Fragile X syndrome

[Ref: Nelson, 21st ed., p. 11319]

57. A 1-month-old infant is brought to the clinic with downward slanting eyes, absence of lower eyelashes, and bilateral external ear anomalies characterized by hypoplastic, malformed, or absent pinnae. The child also has a small mandible and cleft palate. Which of the following conditions is the most likely diagnosis in this case? New Qs

a. Treacher Collins syndrome
b. Down syndrome
c. Pierre Robin sequence
d. Turner syndrome

[Ref: Nelson, 21st ed., p. 4222]

58. A pregnant woman in her first trimester with a history of neural tube defects (NTDs) in a previous pregnancy is seeking guidance on folic acid supplementation. What is the recommended daily dose of folic acid supplementation for this high-risk population? New Qs

a. 400 µg
b. 600 µg
c. 800 µg
d. 4000 µg

[Ref: Nelson, 21st ed., p. 1926]

59. During a routine developmental assessment, a 3-year-old child's Gesell Developmental Schedule yields a developmental quotient (DQ) of 100. What is the most appropriate interpretation of this finding? New Qs

a. Normal development
b. Mild developmental delay
c. Borderline development
d. Advanced development

[Ref: Nelson, 21st ed., p. 1869]

60. A 4-year-old boy is brought to the pediatrician for a routine check-up. On examination, his height is noted to have doubled since birth. What is the most likely interpretation of this finding? New Qs

a. Accelerated growth requiring further investigation
b. Normal growth trajectory for a 4-year-old
c. Constitutional growth delay
d. Early onset of puberty

[Ref: Nelson, 21st ed., p. 1870]

61. A 2-week-old newborn is brought for a well-baby check-up. On examination, the pediatrician notes a small, diamond-shaped anterior fontanel. What is the most likely cause of the fontanel's appearance in this healthy newborn? New Qs

a. Craniosynostosis
b. Normal variation
c. Hydrocephalus
d. Vitamin D deficiency

[Ref: Nelson, 21st ed., p. 3766]

62. A 2-month-old infant is brought to the pediatrician, and the parents express concern about the soft spot on the baby's head. In a newborn, how many fontanels are typically present? New Qs

a. One
b. Two
c. Three
d. Six

[Ref: Nelson, 21st ed., p. 3767]

63. A 7-month-old infant is brought to the pediatrician, and the parents inquire about the appearance of the baby's first teeth. Which of the following sets of temporary teeth is most likely to have erupted or be in the process of erupting in this infant? New Qs

a. Lower central incisors
b. Upper lateral incisors
c. Upper central incisors
d. Canines

[Ref: Nelson, 21st ed., p. 7593]

64. A 15-month-old toddler is brought to the pediatrician for a developmental check-up. The parents express concerns about the child's brain development. The pediatrician explains that by the age of 2, approximately what percentage of the child's brain growth is expected to be completed? New Qs

a. 50%
b. 70%
c. 85–90%
d. 100%

[Ref: Nelson, 21st ed., p. 1742]

Explanation: The correct answer is (c) 85%–90%. By the age of 2 years

65. A 9-year-old girl is referred for evaluation of short stature. Physical examination reveals normal growth parameters, and bone age assessment indicates delayed skeletal maturation. Laboratory tests rule out endocrine abnormalities. What is the most likely diagnosis for this child's short stature? New Qs

a. Growth hormone deficiency
b. Constitutional growth delay
c. Turner syndrome
d. Familial short stature

[Ref: Nelson, 21st ed., p. 1192]

ANSWER KEY

54. a	**55.** a	**56.** a	**57.** a	**58.** d	**59.** a
60. b	**61.** b	**62.** d	**63.** a	**64.** c	**65.** b

426. You are evaluating a term newborn for respiratory distress, and you want to calculate the Silverman-Anderson score. Upon examination, the baby exhibits the following clinical signs: just visible lower chest retractions, minimal nasal flaring, grunting with naked ear, and see saw respiration with no xiphoid retractions. What would be the calculated Silverman-Anderson score for this newborn? New Qs

a. 0 b. 3
c. 6 d. 9

[Ref: Nelson, 21st ed., p. 3997]

Explanation: The Silverman-Anderson score is a clinical assessment tool used to evaluate the severity of respiratory distress in newborns. It assesses five criteria, each scored from 0 to 2: chest retractions, nasal flaring, expiratory grunting, audible wheezing, and oxygen requirement.

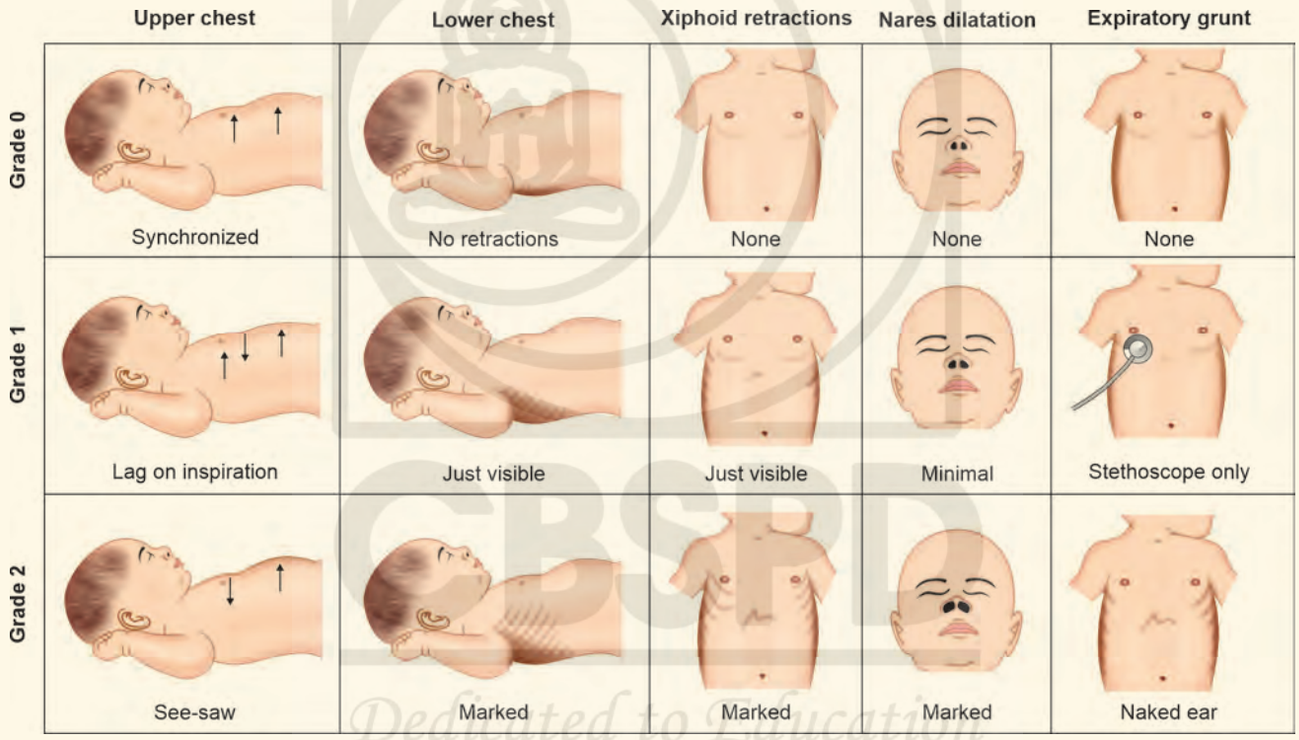
In this case, the baby exhibits the following clinical signs:

- Lower chest retractions: just visible (score 1)
- Minimal nasal flaring: Present (score 1)
- Grunting with naked ear: Present (score 2)
- See saw respiration: Present (score 2)
- No Xiphoid retractions: (score 0)

To calculate the Silverman-Anderson score, sum the scores for each criterion: 1 + 1 + 2 + 2 + 0 = 6.

So, the calculated Silverman-Anderson score for this newborn is: c) 6

A higher score indicates a greater severity of respiratory distress. In this case, the baby's score of 6 suggests moderate respiratory distress.



427. In a neonatal intensive care unit, a nurse observes a newborn as part of routine assessments and notices certain characteristics related to the eyes. To better understand the normal features of a newborn's pupils and their implications, the nurse initiates a discussion with colleagues. What are the distinctive characteristics of a newborn's pupils? New Qs

a. Dilated b. Constricted
c. Mid dilated d. Mid constricted

[Ref: Nelson, 21st ed., p. 10,153]

428. In a neonatal intensive care unit, a premature infant is being evaluated for suspected sepsis, and the healthcare team is considering laboratory markers to aid in diagnosis. Which specific acute phase reactant serves as a valuable marker in the acute-phase response to infection in neonates? New Qs

a. CRP b. ESR
c. WBC d. ANC

[Ref: Nelson, 21st ed., p. 4143]

429. A term newborn is being assessed for gestational age using the Ballard score. On examination, the baby has abundant lanugo, smooth pink visible veins, and breast tissue barely perceptible. The plantar creases are present at the entire sole, eyelids fused tightly, testes in upper canal, rare rugae. What would be the calculated Ballard score in the physical maturity for this newborn? New Qs

a. 5 b. 7
c. 9 d. 11

[Ref: Nelson, 21st ed., p. 3883]

ANSWER KEY

426. c **427.** b **428.** a **429.** a

Explanation: The Ballard score is a clinical assessment tool used to estimate the gestational age of a newborn based on physical and neuromuscular criteria. It includes two main categories: physical and neuromuscular signs.

In this case, the baby exhibits the following physical signs:

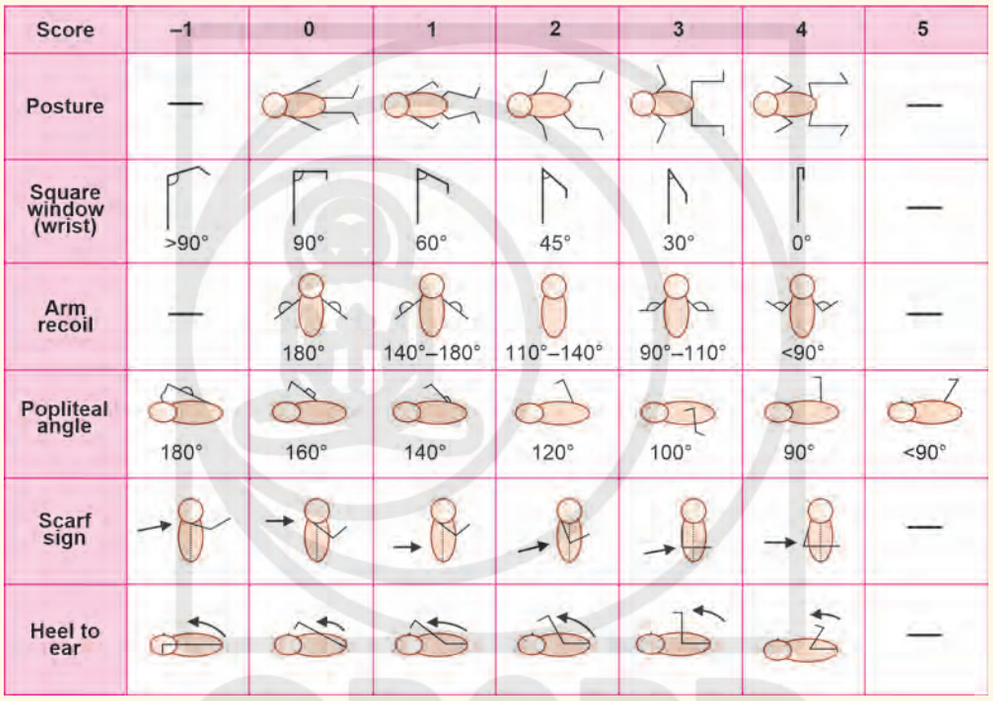
- Abundant lanugo: 1 score
- Breast tissue barely perceptible: 0 score
- Smooth pink visible veins : 1 score

The neuromuscular signs are described as:

- Plantar creases at the entire sole: 4 score
- Testes in upper canal, rare rugae: 1 score
- Eyelids fused tightly: –2 score

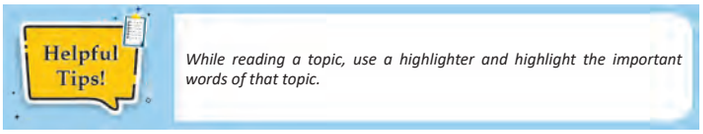
So, the calculated Ballard score for this newborn is: a 5

The Ballard score ranges from –10 to +50, with lower scores indicating a more premature infant and higher scores indicating a more mature infant.



Skin	Sticky, friable, transparent	Gelatinous, red, translucent	Smooth, pink visible veins	Superficial peeling and/ or rash few veins	Cracking; pale areas; rare veins	Parchment, deep cracking no vessels	Leathery cracked, wrinkled	
							Maturity rating	
Lanugo	None	Sparse	Abundant	Thinning	Bald areas	Mostly bald	Score	Weeks
Plantar surface	Heel-toe 40–50 mm; –1 <40mm; –2	>50 mm; no crease	Faint, red marks	Anterior transverse crease only	Creases anterior 2/3	Creases over entire sole	–10	20
							–5	22
Breast	Imperceptible	Barely perceptible	Flat areola; no bud	Stipled areola 1–2 mm bud	Raised areola 3–4 mm bud	Full areola 5–10 mm bud	0	24
							5	26
							10	28
Eye/ear	Lids fused, loosely; 1; tightly; –2	Lids open; pinna flat, stays folded	Slightly curved pinna; soft, slow recoil	Well curved pinna; soft but ready recoil	Formed and firm; instant recoil	Thick cartilage; ear stiff	15	30
							20	32
							25	34
Genitals (male)	Scrotum flat, smooth	Scrotum empty; faint rugae	Testes in upper canal, rare rugae	Testes descending; few rugae	Testes down; good rugae	Testes pendulous, deep rugae	30	36
							35	38
Genitals (female)	Clitoris prominent, labia flat	Clitoris Prominent, small labia minora	Clitoris Prominent, enlarging minora	Majora and minora equally prominent	Majora large; mionora small	Majora covers clitoris and minora	40	40
							45	42
							50	44

ANSWER KEY



Other benign, transient neonatal changes seen are:
- Transient neonatal pustular melanosis
- Erythema toxicum
- Breast enlargement
- Vaginal discharge
- Vernix caseosa
- Caput succedaneum
- Epstein pearls
- Subconjunctival hemorrhages

Options a, b and c are true statements regarding the Mongolian spots.

440. A mother brings her 5-day-old neonate with the appearance of the following rash on day 3 of life. On examination the child was alert and active. There were no other significant clinical sign or symptom noted in the child. Based on the clinical history and findings given, identify the condition diagnosis? New Qs

a. Erythema toxicum neonatorum
b. Exanthem subitum
c. Erythema infectiosum
d. Kissing disease.

[Ref: Nelson, 21st ed., p. 13324]

Explanation: **Erythema toxicum neonatorum** is an Erythematous macule with a central tiny papule, seen anywhere—except the palms and soles. The lesions are packed with eosinophils, and there may be accompanying eosinophilia in the blood count. The cause is unknown, and no treatment is required as the rash disappears after 1–2 weeks.

441. A 25-year-old mother Mala delivered her child in a PHC, After delivery, neonate had delayed cry after birth and developed features of hypoxic ischemic encephalopathy (HIE). The DMO referred the newborn to the higher center for evaluation. On examination, the neonate had hypotonia, exaggerated ankle reflex, recurrent focal seizures along with a miotic pupils. What is the most likely stage of HIE according to Sarnat staging system? New Qs

a. Stage 1 b. Stage 2
c. Stage 3 d. Stage 4

[Ref: Nelson, 21st ed., p. 3953]

Explanation: Based on the clinical findings of **hypotonia, exaggerated ankle reflex** and **recurrent focal seizures,** which are typically seen in case of Stage 2 of HIE.

HIE—Refers to CNS dysfunction or encephalopathy associated with Perinatal asphyxia.

Potential to cause mortality and long-term sequel like disabilities and cerebral palsy.

Etiology: Pathologically, any factors which interfere with the circulation between maternal and fetal blood exchange.

Pathophysiology of Asphyxia

Redistribution of blood flow to vital organs (brain, heart and adrenal) to prevent from hypoxic damage. 'Diving Reflex'

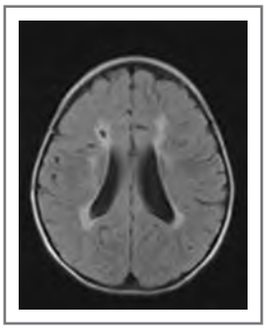
Features	Stage I	Stage II	Stage III
Severity	Mild degree	Moderate degree	Severe degree
Consciousness	Hyper alert and irritable	Lethargic and obtunded	Comatosed
Pupils	Dilated	Constricted	Dilated
Tone	Normal tone	Marked hypotonia	Flaccidity
Reflexes	Normal or increased	Sluggish	Absent
Seizures	No seizures and symptoms usually resolve in <24 hours	Seizures are common	Seizures are frequently seen and more resistant to treat with anticonvulsants
EEG	Normal	Abnormal	Abnormal with decreased background activity
Apgar score	5 to 7	3 to 4	1 to 2

Option a: Stage 1 will have a hypertonic and irritable child in which seizures are usually absent.

Option b: Stage 3 will have a flaccid child along with the absent reflexes.

Option c: Stage 4 is not classed under Sarnat staging

442. A mother brings her 1-day-old neonate who was born at home. On asking history the mother informs that the newborn had a delayed cry after birth. When she started feeding her, there were a history of poor feeding along with few episode of seizures. A MRI was advised and shows the following abnormality, what is the most likely diagnosis? New Qs



a. Periventricular leukomalacia
b. Germinal matrix hemorrhage
c. Status marmoratus with basal ganglia infarcts
d. Periventricular inflammation with ventriculitis

[Ref: Nelson, 21st ed., p. 3938]

Explanation: This MRI is showing increased periventricular T2 signal on FLAIR image indicating Periventricular leukomalacia (PVL).

PVL has emerged as the principal form of brain injury in the premature infant.

1. Death of white matter (WM) in the brain's Periventricular (PV) region
2. Caused by decrease in O_2 or blood flow to PV WM

Clinical Correlates:
- Developmental delay
- Seizures
- Spastic diplegia

ANSWER KEY

440. a **441.** b **442.** a

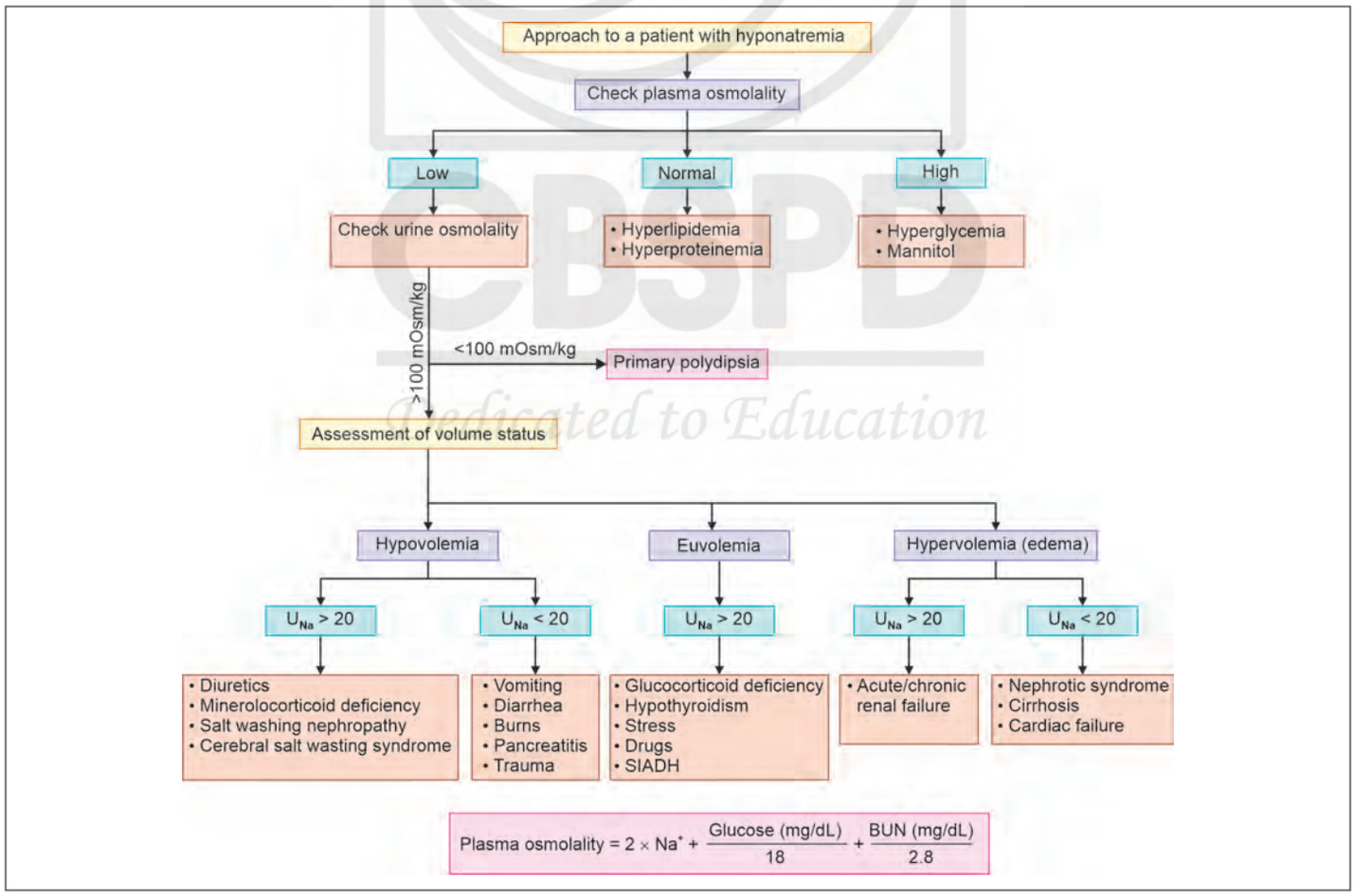
MEDICINE

— *Dr Mohammed Shakeel Sillat*

SYNOPSIS

GENERAL MEDICINE

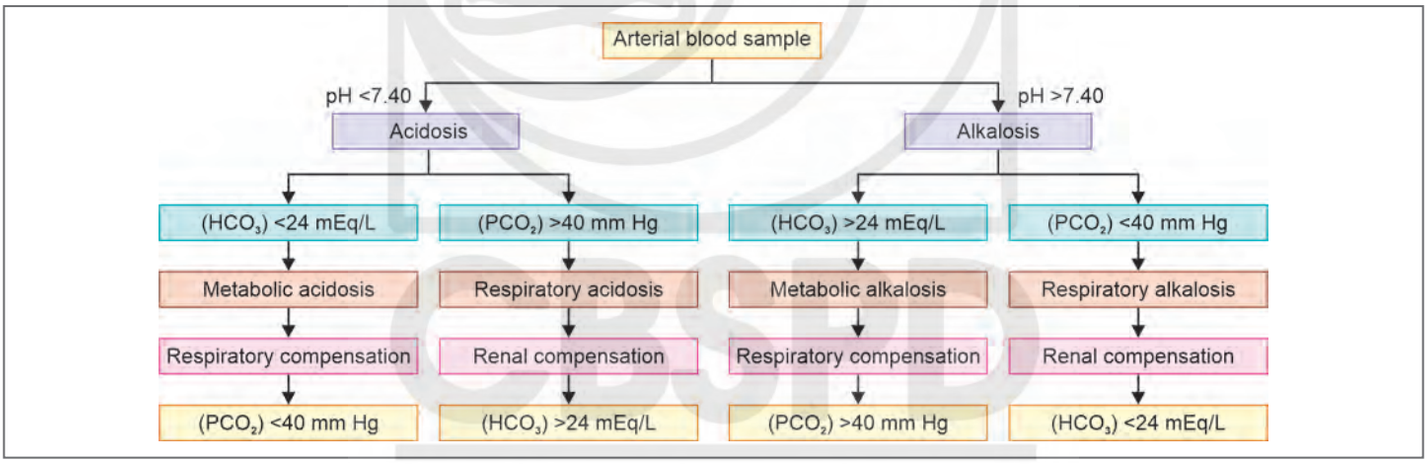
APPROACH TO HYPONATREMIA

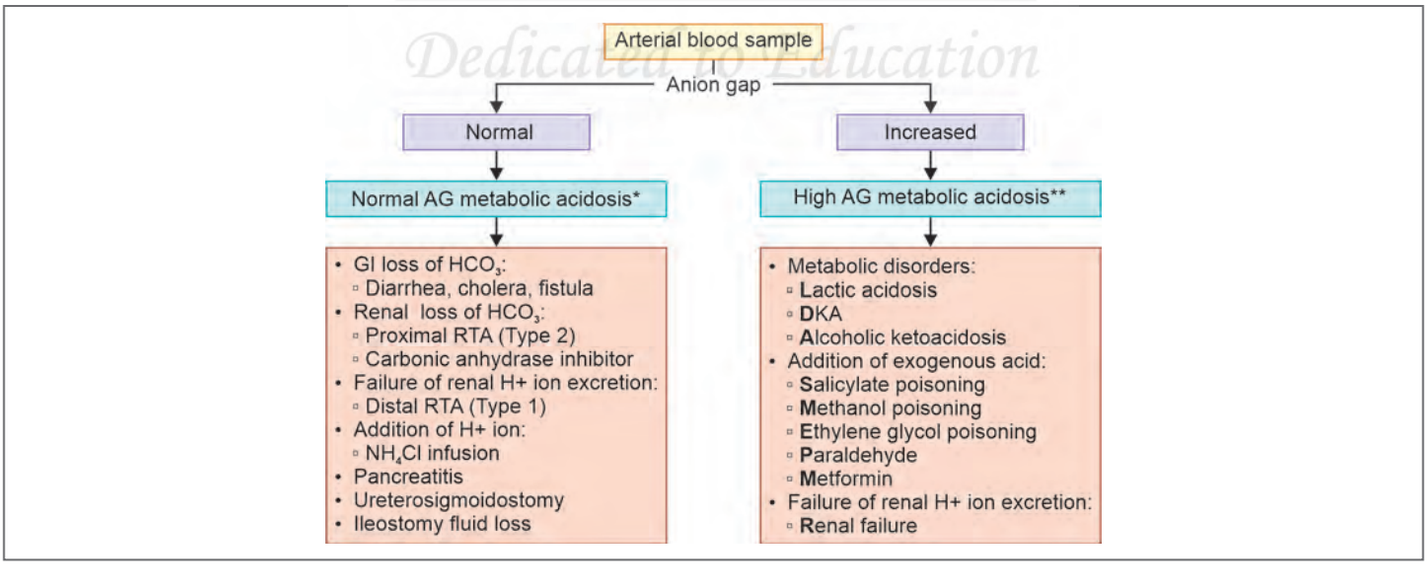


Lab Parameters	SIADH*	CSW**	Central DI***	Nephrogenic DI	Primary polydipsia
ADH levels	↑	N/↓	↓	↑	↓
Urine output	↓/N	↑	↑ (>3L/Day)	↑	↑
Serum sodium	↓	↓	↑	↑	↓
Serum osmolality	↓↓	↓	↑	↑	↓
Urine sodium	↑	↑↑	↓		↓
Urine osmolality	↑	↑	↓ (<200)	↓ (<200)	↑
Urine osmolality after water deprivation			No change	No change	↑
Urine osmolality after AVP			↑	No change	↑
Hydration	Euvolemia	Dehydration	Dehydrated	Dehydrated	Over hydration
Treatment	Fluid restriction – TOC Loop diuretics, Demeclocycline	IV hypertonic saline Fludrocortisone	Desmopressin	Thiazide diuretics Amiloride	Fluid restriction

* Syndrome of Inappropriate ADH Release | ** Cerebral Salt Wasting Syndrome | *** Diabetes insipidus

APPROACH TO ACID-BASE DISORDERS





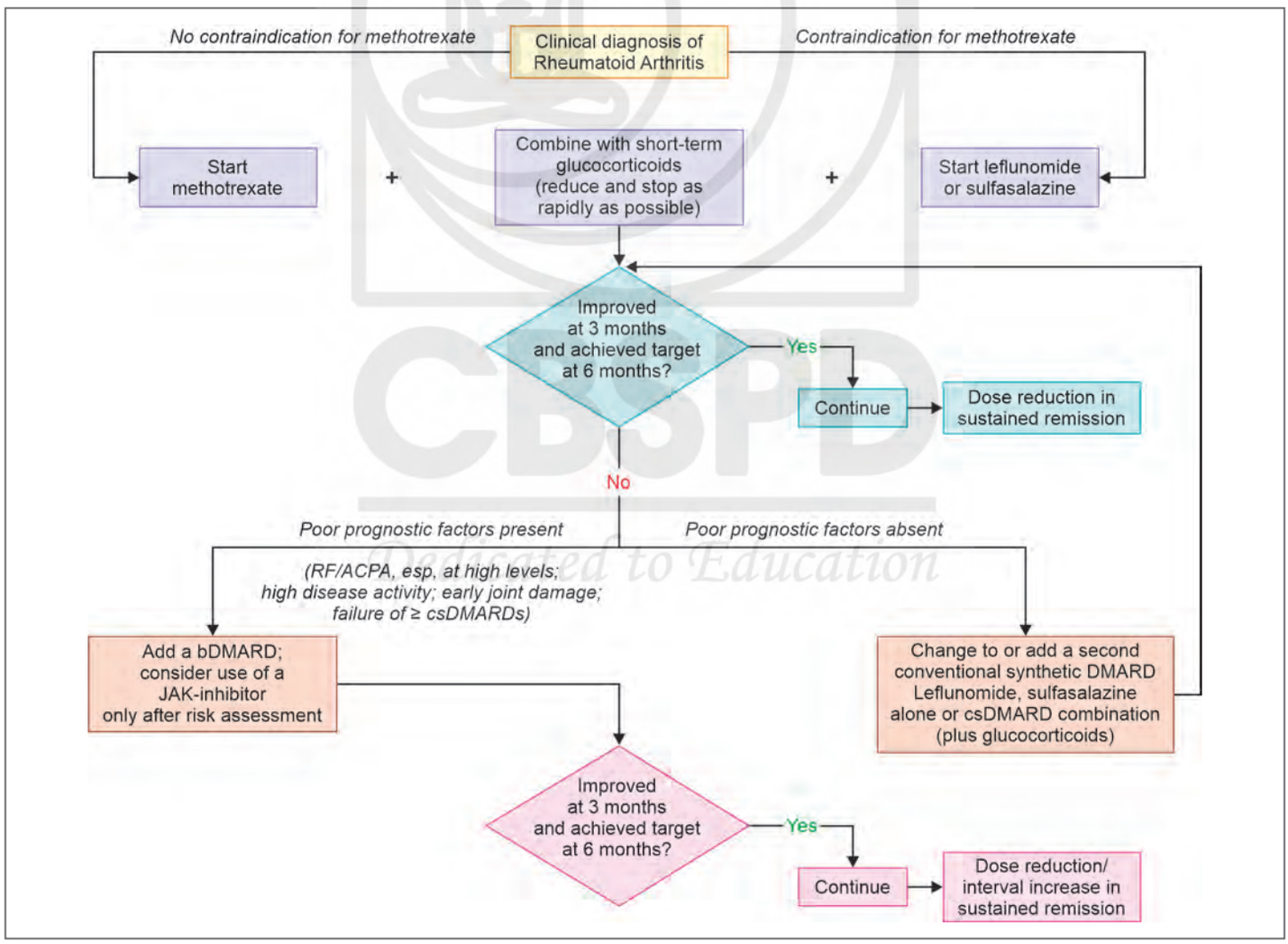
* Normal anion gap metabolic acidosis or hyperchloremic metabolic acidosis.
****Mnemonic** for high AG metabolic acidosis: DR MAPLES

	PSGN	IgA nephropathy/Berger's disease	Good Pasture's syndrome	Alport syndrome	Diabetic nephropathy
Facts	• It is an immune-mediated disease • Seen 1–4 weeks after a skin or pharyngeal infection • Due to group A β hemolytic streptococci (M type). • Usually affects children	• Respiratory/GI exposure to environmental agents → • ↑ mucosal IgA Synthesis → Formation of circulating IgA complex → Gets entrapped in mesangium • Seen in < 1 week of URTI • MC cause of GN worldwide	• Autoimmune disorder characterized by formation of Anti-GBM Ab against both capillary of lungs and glomerulus (GBM) • Antibody formed is against noncollagenous domain of **α3** chain of **Type IV collagen**	• MC hereditary nephritis. • Due to abnormality in type IV collagen. • MC form of Alport syndrome is d/t mutation of the **α5** chain of **Type IV** collagen • α5-chain gene is located on 'X' chromosome • MC pattern of inheritance → X linked (classical Alport syndrome) • Can be inherited as X-linked, AR or AD	• MC systemic disorder associated with nephrotic syndrome • Overall MCC of nephrotic syndrome • MC cause of chronic renal failure
Clinical features	• Development of hematuria 1–4 weeks after an episode of URTI or skin infection (delayed hematuria). • Oliguria, edema, HTN • **Complete recovery in >95% patients** • One attack confers lifelong immunity	• Synpharyngitic hematuria – Development of hematuria within 2–4 days of pharyngitis/URTI • Recurrent Gross Hematuria → MC clinical feature • Persistent asymptomatic microscopic hematuria may be present • Usual age—2nd–3rd decade	• Pulmonary manifestations are hemoptysis • Pulmonary hemorrhage (diffuse alveolar hemorrhage) • Renal manifestations are features of RPGN like hematuria, proteinuria, rapidly progressive renal failure, etc.	• Presents with a **triad** of → **1. Hereditary Nephritis:** ▪ Recurrent gross hematuria ▪ Proteinuria ▪ Progressive renal failure by 30 years **2. Sensorineural hearing loss:** ▪ MC extrarenal manifestation **3. Ocular abnormalities**: ▪ Anterior lenticonus is characteristic ▪ Cataract ▪ Keratoconus	• Similar to nephrotic syndrome • Passage of foamy urine • May present with complications like diabetic retinopathy, CAD, neuropathy, etc.
Investigations	• Transient hypocomplementemia • C_3 levels ↓ and then return to normal • ASO titer↑↑ • Subnephrotic proteinuria (1–2 g/d) • RBC and WBC casts in urine	• Normal C_3 level • ASO titer → Normal	• Normal complement level. • Circulating IgG anti, GBM Antibody • Dysmorphic RBC and RBC cast • CXR → Diffuse B/L pulmonary infiltrates • ANCA may be +ve in upto 30% patient	• Kidney or skin biopsy • High frequency audiometry for SNHL • Genetic analysis	• Microalbuminuria → 1st clinically detectable sign/ Earliest clinical feature • Spot urine sample is preferred and is best • Macroalbuminuria→ Indicates established disease
Microscopy	• Crescents • Hypercellularity of mesangial and endothelial cells • Subendothelial deposits and subepithelial humps	• Mesangioproliferative GN • IF → Mesangial deposits of IgA (subclass IgA_1) often with C_3 and Properidin • IgG deposits may also be seen • EM → Electron dense deposits in mesangium	• Diffuse crescenteric GN • IF → Diffuse linear IgG staining along BM	• EM → Irregular thinning and splitting of GBM giving a basket weave appearance or split basement membrane	• Diffuse glomerulosclerosis: • MC pattern • Thickening of GBM • Capsular hyaline drops or fibrin caps may be present • Nodular glomerulosclerosis • Also known as Kimmelstiel Wilson lesion • Pathognomonic of DM.
Extra edge	• Early systemic antibiotic therapy for throat or skin infection will not eliminate the risk of GN • Recurrence → Rare • Prognosis – excellent	• Rx: ACEI for proteinuria • Recurrence → Common	• T/T → Plasmapheresis	• Lenticonus + Hematuria is considered pathognomonic for classical Alport. • Recurrence of disorder in renal transplant → rare	• Armani - Ebstein cells → Tubular cells with glycogen deposit • Kidney size may increase in initial stage of disease

	Polycythemia Vera		Myelofibrosis	Essential Thrombocytosis
Lab features	• ↑Hb% and RBC count • ↑ HCV/Venous HCT >55% • ESR ↓ ; EPO ↓ ; LAP score↑ • Abnormal platelet function • ↑ Vitamin B_{12} binding capacity • ↑ Uric acid • IOC – Red cell mass (Increased)		• ↑ LAP score • PS → Teardrop cells/ Dacrocytes and Pancytopenia • Hypercellular bone marrow • Dry tap on aspiration • BM biopsy → reticular/ collagen on biopsy (IOC)	• ↑ platelet count (>600 × 10^9/L) • Hematocrit and RBC – Normal • N/↑ LAP score • Abnormal bleeding time
Management	• Venesection • TOC for Erythromelalgia → NSAIDs	• Hydroxyurea • Anagrelide • Radioactive iodine P^{32}	• Splenectomy • JAK-2 inhibitors	• Asymptomatic patient → No therapy • Symptomatic patient → IFN and Anagrelide

RHEUMATOLOGY

MANAGEMENT OF RHEUMATOID ARTHRITIS



Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Mohammed Shakeel Sillat

GENERAL MEDICINE

[Total Questions 104]

ACID-BASE DISORDERS

1. Patient was being treated in ICU for sepsis. ABG showed pH = 6.9, pO_2 = 80 mm Hg, pCO_2 = 55 mm Hg, HCO_3 = 10 mEq/L. Repeating ABG after 2 hours shows pH = 7.1, pCO_2 = 20 mm Hg, pO_2 = 100 mm Hg, HCO_3 = 10 mEq/L. Which is the most plausible explanation for change seen in ABG report? *(INI-CET NOV 2023)*

a. Excess air and less heparin in ABG sample
b. Excess air and more heparin in ABG sample
c. Less air and more Heparin in ABG sample
d. Less air and less heparin in ABG sample

[Ref: J Ped Nephrol 2019; 7(3)]

2. What is the diagnosis in a sick COPD patient with pH = 7.3, pCO_2 = 80 mm Hg, and HCO_3 = 28 mEq/L? *(INI-CET NOV 2023)*

a. Respiratory acidosis due to hyperventilation and adequate compensation
b. Respiratory acidosis due to hyperventilation and partial compensation
c. Respiratory alkalosis due to hyperventilation and adequate compensation
d. Respiratory alkalosis due to hyperventilation and partial compensation

[Harrison's Principles of Internal Medicine, 21st ed., p. 361]

Explanation: In acute respiratory acidosis, there is 1 mEq/L increase in HCO_3 per 10 mm Hg rise in $PaCO_2$. In chronic respiratory acidosis (after 24 h), there is 4 mEq/L increase in HCO_3 for every 10 mm Hg increase in $PaCO_2$. In this COPD patient with chronic respiratory acidosis, $PaCO_2$ increased by 40 mm Hg, hence, expected HCO_3 would be approx 40 mEq/L.

Prediction of compensatory responses to simple acid-base disturbance and pattern of changes

Disorder	Prediction of compensation	Range of value		
		pH	HCO_3^-	$PaCO_2$
Metabolic acidosis	$PaCO_2 = (1.5 \times HCO_3^-) + 8 \pm 2$	Low	Low	Low
Metabolic alkalosis	$PaCO_2$ will ↑ 6 mm Hg per 10 mmol/L ↑ in $[HCO_3^-]$	High	High	High
Respiratory alkalosis		High	Low	Low
Acute	$[HCO_3^-]$ will ↓ 0.2 mmol/L per mm Hg ↓ in $PaCO_2$			
Chronic	$[HCO_3^-]$ will ↓ 0.4 mmol/L per mm Hg ↓ in $PaCO_2$			
Respiratory alkalosis		Low	High	High
Acute	$[HCO_3^-]$ will ↑ 0.1 mmol/L per mm Hg ↑ in $PaCO_2$			
Chronic	$[HCO_3^-]$ will ↑ 0.4 mmol/L per mm Hg ↑ in $PaCO_2$			

3. Calculate the anion gap from the following values: Na^+145 mEq/L, K^+ 4 mEq/L, CI^- 90 mEq/L, HCO_3^- 20 mEq/L. *(INI-CET MAY 2023)*

a. 35 b. 68
c. 25 d. 43

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 360]

Explanation: Anion gap = $[Na^+]-([Cl^-] + [HCO_3^-])$

4. A patient presents with severe vomiting and diarrhea and has orthostatic hypotension. What metabolic abnormalities would you expect in this patient? *(INI-CET MAY 2023)*

a. Hypokalemia b. Hypochloremia
c. Metabolic alkalosis d. Respiratory alkalosis

[Harrison's Principles of Internal Medicine, 21st ed., p. 366]

5. Which of the following can be used to determine the acid-base imbalance? *(INI-CET MAY 2023)*

1. Arterial pH 2. Venous pH
3. Venous pO_2 4. Venous pCO_2

Select the correct answer from the given code.

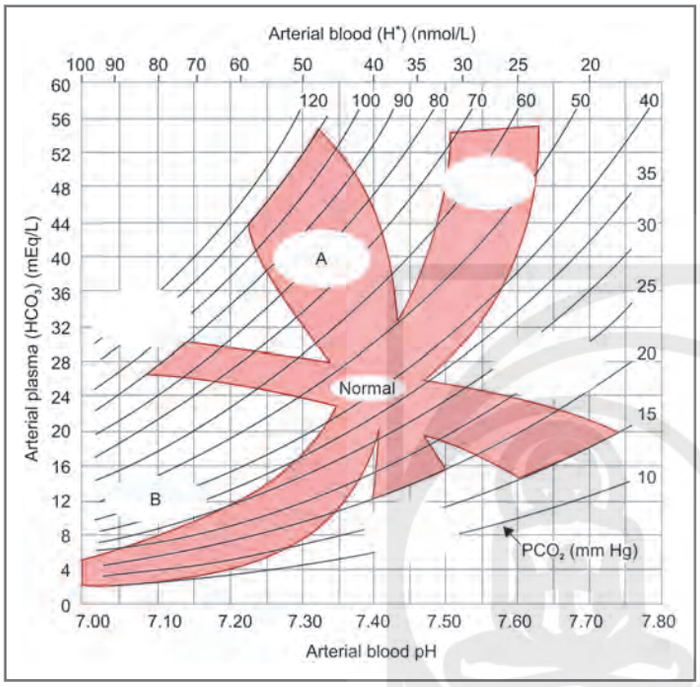
a. 1 b. 1, 4
c. 1, 3, 4 d. 1, 2, 3, 4

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 359]

ANSWER KEY

1. b **2.** b **3.** a **4.** d **5.** a

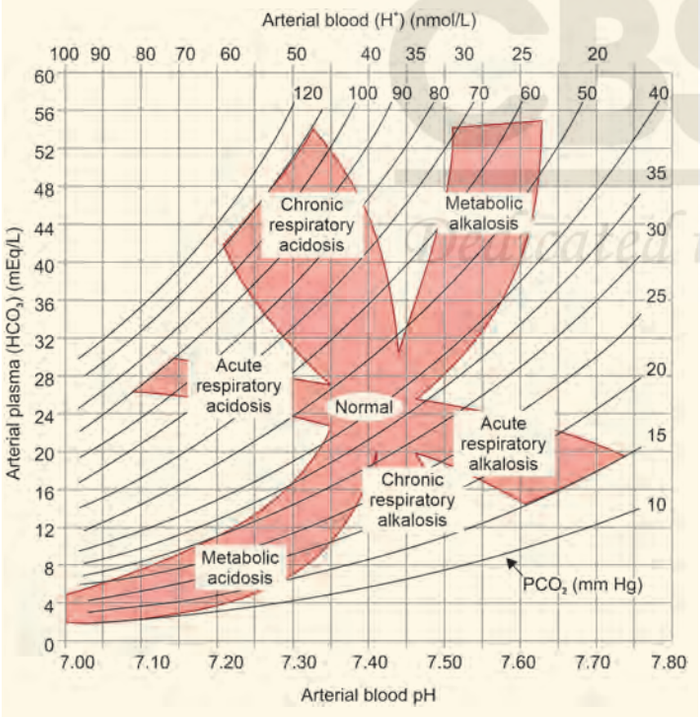
17. Identify the regions marked A and B in the following image:
(INI-CET NOV 2020)



a. Chronic respiratory acidosis and metabolic acidosis
b. Metabolic alkalosis and metabolic acidosis
c. Acute respiratory acidosis and chronic respiratory alkalosis
d. Acute respiratory acidosis and metabolic acidosis

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 359]

Explanation:



18. Metabolic acidosis with a normal anion gap is seen in a patient with:
a. Alcohol intoxication
b. Small bowel fistula
c. Shock
d. Aspirin ingestion

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 364]

19. Urinary anion gap is increased in:
a. Diarrhea
b. Water intoxication
c. Ureterosigmoidostomy
d. Renal tubular acidosis

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 364]

20. All of the following are causes of metabolic acidosis with normal anion gap; except:
a. Proximal renal tubular acidosis
b. Salicylate poisoning
c. Diarrhea
d. Pancreatitis

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 361]

21. A 60-year-old man, case of COPD is admitted with labored breathing at rest and marked use of accessory muscles. Arterial blood gas analysis reveals the following values:
pH 7.33, $PaCO_2$ 64 mm Hg, PaO_2 50 mm Hg, HCO_3 34 mEq/L
What is the possible diagnosis?
a. Metabolic acidosis with respiratory alkalosis
b. Chronic respiratory acidosis with compensated metabolic alkalosis
c. Acute respiratory acidosis with compensated metabolic alkalosis
d. Respiratory and metabolic acidosis

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 359]

22. Best management option for respiratory alkalosis is:
a. Acetazolamide
b. IPPV
c. Normal saline
d. Rebreathing from a paper bag

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 368]

23. A 70-year-old man with history of CHF presents with shortness of breath and leg swelling. ABG shows pH 7.24, PCO_2 60 mm Hg, PO_2 52 mm Hg, HCO_3 27 mEq/L. What is the primary acid-base disorder?
a. Respiratory alkalosis
b. Metabolic alkalosis
c. Metabolic acidosis
d. Respiratory acidosis

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 359]

24. Type B lactic acidosis occurs due to:
a. Cyanide poisoning
b. Diabetes mellitus
c. CHF
d. Severe anemia

[Ref: Harrison's Principles of Internal Medicine, 21st ed., p. 361]

Explanation: Type A lactic acidosis can result from inadequate tissue perfusion, which may stem from circulatory insufficiency (such as shock or cardiac failure), severe anemia, mitochondrial enzyme defects, or exposure to inhibitors like carbon monoxide or cyanide.

ANSWER KEY

17. a	**18.** b	**19.** d	**20.** b	**21.** b	**22.** d
23. d	**24.** b				

SURGERY

— *Dr Rohan Khandelwal*

SYNOPSIS

GENERAL SURGERY

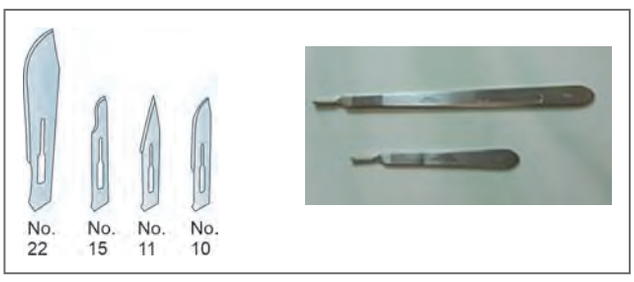
DAY CARE SURGERY

Enhanced recovery after surgery (ERAS) protocol:

Preoperative	Intraoperative	Postoperative
• Avoid mechanical bowel preparation • Solids up to 6 hours prior to surgery • Clear fluids up to 2 hours prior to surgery (carbohydrate loading can be done)	• Minimally invasive surgical approach • Local anesthetic or long acting local (liposomal bupivacaine) • Prophylaxis for nausea and vomiting (at least 2 classes of medications)	• Opioids only for breakthrough pain • Regular diet within 24 hours • Discontinue IV fluids within 24 hours • Ambulate within 24 hours

SURGICAL BLADES AND ENERGY SOURCES

- **Number 11 (Pointed/tab blade):** For incision and drainage.
- **Number 12 (Curved):** For suture removal.
- **Numbers 10, 15, 20, 21, 22, 23:** For making incisions.
- Blades are passed in a kidney tray to prevent injury.
- Incision must be made from far to near.



Bard Parker handle

Energy Sources

Monopolar cautery	Bipolar cautery
Current flow: • Current from machine to tip, surgeon uses tip to cut or coagulate • Current leaves body through cautery pad • Cautery pad should be placed over a well vascularized area and should have a wide area of contact • If small cautery pad/improperly placed pad: There can be burns at the site of attachment • Cautery pad not placed → Incomplete circuit → Cautery will not work	• Current enters through one channel and exits from another channel • Circuit is getting locally completed
Can injure nerves and end arteries and nearby vital structures (current traveling throughout the body)	Can be used near vital structures, end arteries
Avoid near nerves, end arteries (e.g., ear lobule, penis) and in patients with cardiac pacemakers.	Surgeries used: • Thyroid • Parotid • Penile
Can cut and coagulate	Only coagulate

Monopolar cautery **Bipolar cautery**

SURGICAL SAFETY CHECKLIST

Sign in	Time out	Sign out
Before induction of anesthesia. From ward to OT table	Before skin incision	Before patient leaves operating room, at skin closure
Written consent, confirm the identity of patient, confirm site marking, inquire about allergies	Reconfirm the identity of patient Surgeon says: Name of procedure, estimated blood loss Anesthetist says: Antibiotic prophylaxis given	Nurse: Gauze and instrument count Anesthetist: Actual blood loss Surgeon: Specimen labeling

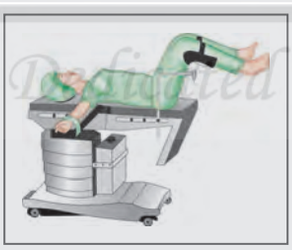
OT POSITIONS

Supine position:
- M/c position for abdominal and breast surgeries.

Trendelenburg position:
- Used in pelvic surgeries.
- Foot end is raised, head end is low.

Reverse Trendelenburg position:
- Used in laparoscopic cholecystectomy.
- Head end is raised, foot end is low.

Lithotomy position:
- Used in obstetric, gynecological and urological procedures.
- Common peroneal nerve injured if legs are not supported properly in lithotomy position.



Lateral or kidney position:
Uses:
- Thoracotomy
- Pyelolithotomy
- Nephrolithotomy
- Nephrectomy

Brachial plexus injury occurs if arms are hyperextended in lateral position.

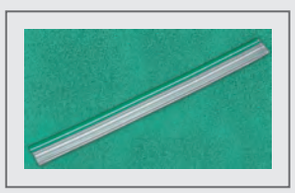
Prone position:
- Used for spinal surgery and pilonidal sinus surgery.

Sitting/Fowler's position:
- Used for posterior cranial fossa surgeries.
- Advantage: Relatively bloodless field good exposure.
- Disadvantage: Air embolism if veins are nicked.

DRAINS, SUTURES AND KNOTS

Drains

- **Corrugated rubber drain:** Open drain for abscesses. Rarely used.



- **Romovac suction drain:** Closed drain with negative pressure. Can be used after mastectomy, thyroidectomy, neck dissection.

- **Abdominal drain:** Connected to abdominal drainage bag.

- **Underwater seal bag:** Connected to intercostal chest tubes.

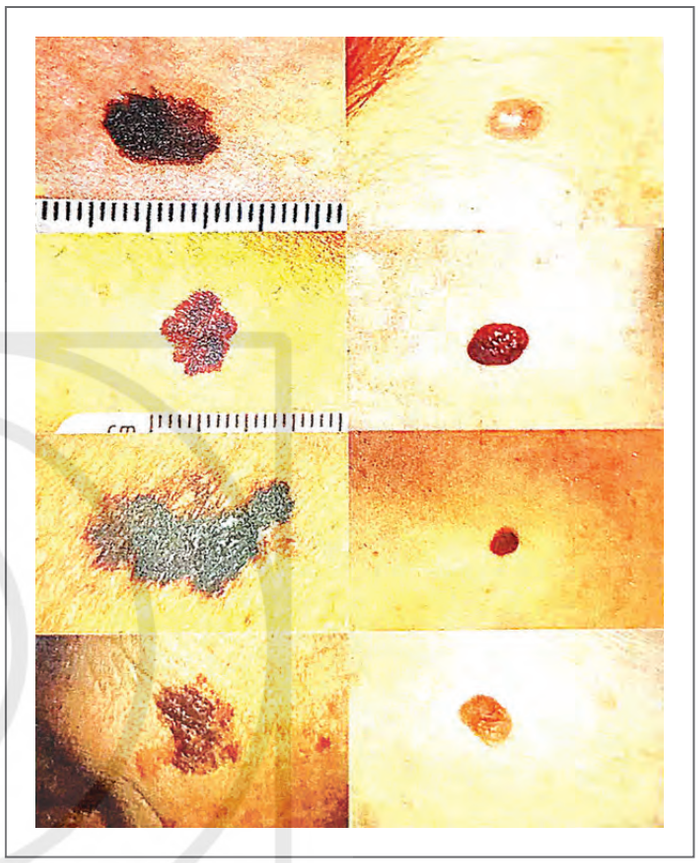
M/c site: Face (above line joining angle of mouth to ear lobule).

Malignant Melanoma

Risk factors:
- UV radiation
- White population.
- Familial atypical mole melanoma syndrome.

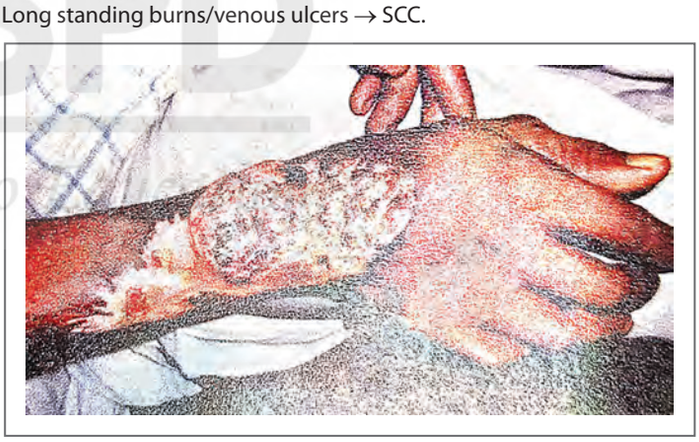
Types:
- Superficial spreading:
  - M/c type.
  - Seen in young.
  - Sun exposed areas.
  - M/c melanoma in a pre-existing mole.
- Lentigo maligna:
  - In situ melanoma.
  - Elderly patient.
  - Best prognosis.
- Acral:
  - M/c in dark skinned patients.
  - Seen in palm, sole.
- Nodular:
  - Most aggressive.
  - Worst prognosis.
  - Rapid vertical phase of growth.
  - Variant: Amelanotic melanoma.
- For detection of melanoma:
  - A → Asymmetry
  - B → Borders which are uneven
  - C → Change in color
  - D → Increase in diameter >6 mm

IHC markers:
- S–100.
- HMB 45.
- Melan A.



Rx:
Wide local excision
If LN not enlarged → SLNB is done.
Most important prognostic factor: LN status.

Marjolin's ulcer:
Long standing burns/venous ulcers → SCC.



Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Rohan Khandelwal

GENERAL SURGERY

[Total Questions 136]

1. Open cardiac massage is what kind of wound? ***(INI-CET NOV 2023)***

a. Clean
b. Contaminated
c. Dirty
d. Clean contaminated

[Ref: Bailey & Love's Short Practice of Surgery, 28th ed., p. 973]

2. Feeding is done through the method shown in image. Which of the following is not a complication? ***(INI-CET MAY 2023)***

a. Aspiration
b. Pneumothorax
c. Refeeding syndrome
d. Osteoporosis

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., ch. 40, p. 437]

Explanation: Aspiration is a complication of enteral feeding where food or fluids enter the lungs, causing pneumonia or lung abscess. It is not a complication of the feeding method itself, but rather a complication of the patient's ability to swallow or clear their airway.

3. A 28-year-old female presenting with 36 weeks of gestation, underwent a C-section for placenta accreta spectrum. During the procedure, there was profuse bleeding and she was transfused blood according to the massive blood transfusion protocol. Which of the following is not seen after a massive blood transfusion? ***(INI-CET MAY 2023)***

a. Hypothermia
b. Hypomagnesemia
c. Hypokalemia
d. Hypocalcemia

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., ch. 35, p. 377]

Explanation: Hypokalemia is a common electrolyte abnormality following massive blood transfusion. This is due to the release of potassium from red blood cells during transfusion.

4. Identify the surgical instrument shown in the image. ***(INI-CET MAY 2023)***

a. Mixter
b. Adson's
c. Kocher's
d. Rampley

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., ch. 11, p. 123]

Explanation: The Mixter instrument is a long, narrow, curved instrument with a blunt end that is used to dissect and retract soft tissues during surgery. It is commonly used in thyroid and parathyroid surgery.

5. A 25-year-old male was brought to the casualty after road traffic accident with pelvic fracture in hypovolemic shock. What is the earliest treatment for control of hemorrhage? ***(INI-CET MAY 2023)***

a. Immediate internal fixation
b. Multiple blood transfusions
c. Use bedsheets to compress the pelvis
d. Emergency external fixation

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., ch. 60, p. 655]

Explanation: Emergency external fixation is the earliest treatment for control of hemorrhage in a patient with a pelvic fracture in hypovolemic shock. This is a temporary measure that is used to stabilize the pelvis and stop the bleeding.

ANSWER KEY

1. b **2.** a **3.** c **4.** a **5.** d

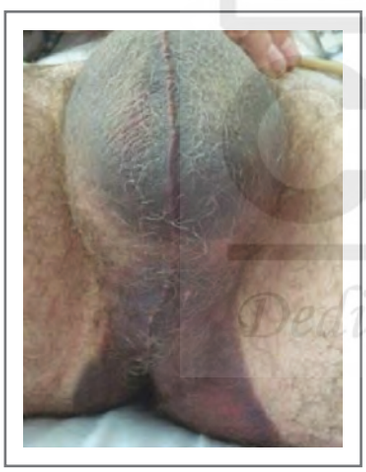
782. A patient is undergoing a surgery during which the nurse passes this over to the surgeon. What is this patient most likely being treated for? New Qs

a. Urolithiasis
b. Male infertility
c. Male sexual dysfunction
d. Lithotripsy

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 680]

Explanation: The picture shows the implantable inflatable penile prosthesis used in erectile dysfunction (ED). This consists of fluid containing paired corporal cylinders, a scrotal pumping device and a fluid reservoir, which is typically positioned in the retropubic space or extraperitoneal lower abdominal quadrant.

783. A male patient presented with pain in his scrotal area after a trauma. The clinical finding is shown here. What is this patient most likely suffering from? New Qs



a. Extraperitoneal bladder rupture
b. Intraperitoneal bladder rupture
c. Anterior urethral rupture
d. Posterior urethral rupture

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 532]

Explanation: This picture shows hematoma in the perineum and scrotum (butterfly hematoma).

Urethral injury occurs due to blow onto perineum. The common causes being cycling accidents, loose manhole covers and gymnasium accidents. Bulbar urethra is crushed onto the pubic bone associated with bleeding and bruising.

784. A patient presented with severe pain in his abdomen. Imaging findings are shown here. What is the most likely diagnosis? New Qs

a. Pyelonephritis
b. Polycystic kidney
c. Renal artery stenosis
d. Ureteric stones

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 456]

Explanation: This picture shows an intravenous pyelogram of the kidneys showing spider leg appearance. Polycystic kidneys have this specific appearance on IVP. The renal shadow is enlarged. The renal pelvis is compressed and elongated. The calyces are narrow and stretched over the cysts (Spider leg/bell shaped).

785. A 45-year-male patient presented with a left-sided scrotal swelling which the patient noticed recently. On examination, it is transilluminant. He is undergoing removal and during the surgery, the following finding can be noted. What is the diagnosis? New Qs

a. Primary hydrocele
b. Secondary hydrocele
c. Epididymal cyst
d. Spermatocele

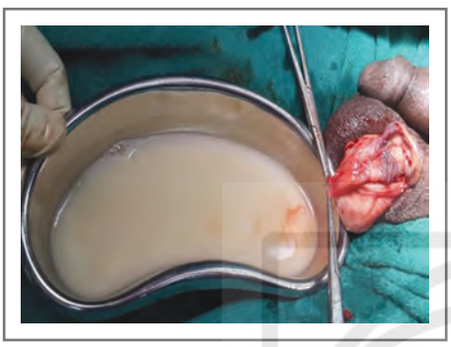
[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 645]

Explanation: Left-sided scrotal swelling which transilluminates – can be primary hydrocele and epididymal cyst. Intraoperative picture shows a cystic swelling behind the testis. Whereas hydrocele fluid collects between the two layers of tunica vaginalis and testis is not seen until we open the sac.

ANSWER KEY

782. c **783.** c **784.** b **785.** c

790. A patient is undergoing a surgery during which this photo is taken. What is the most likely diagnosis based on this image shown here? New Qs



a. Pyocele
b. Chylocele
c. Hydrocele
d. Spermatocele

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 642]

Explanation: You can visualize the white chylous fluid on opening the tunica vaginalis. Hence, it is chylocele. Pyocele where pus is present. Spermatocele will not give this amount of fluid.

791. An elderly male presented with a lesion in the prepuce. On examination, it can be retracted and left side swelling is fixed on palpation. Which of the following is the best step to manage this patient's condition? New Qs

a. Circumcision and radiotherapy to inguinal nodes
b. Glansectomy and ipsilateral inguinal block dissection
c. Partial penectomy and bilateral inguinal block dissection
d. Total penectomy and bilateral inguinal block dissection

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 672]

Explanation: The condition is carcinoma of the prepuce without any fixation, with fixed ipsilateral inguinal nodes which is N3. Ideal treatment will be circumcision for primary. Fixed inguinal nodes should be started on induction chemotherapy and radiotherapy is planned. Block dissection to be done after this.

792. A male patient presented with pain in his penis. Clinical finding is shown here. Which of the following cannot be done in this patient to manage his condition? New Qs

a. Just penile bandage for 2 days
b. Needle puncture and release edema fluid
c. Dorsal slit
d. Manual reduction under LA

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 518]

Explanation: The condition is paraphimosis, which is an emergency as it can progress to glanular gangrene. Manual reduction and needle puncture tried initially, when nothing works, dorsal slit and release of constriction band to be done under penile block.

793. A male patient presented to the OPD with pain in his scrotal area and a huge swelling as shown in the image below. His BMI is 18 kg/m^2. Which of the following is not done to manage this patient's condition? New Qs

a. Should be managed in foot end elevated position in bed
b. Should be reduced before surgery
c. Pneumoinsufflation of the abdomen using laparoscope to be done before surgery
d. Spirometry exercises to be advised two weeks before surgery

[Ref: Bailey & Love's Short Practice of Surgery, 27th ed., p. 663]

Explanation: The condition is huge inguinal hernia or scrotal abdomen where most of the abdominal contents are in scrotum. These causes deserve special attention as because are long way out of the abdominal cavity, sudden reduction inside abdominal cavity will cause respiratory compromise and abdomen cannot accommodate. So, patient advised foot end elevation, pneumoinsufflation to increase the volume, and spirometry to be advised.

DID YOU KNOW?

Many students remember complex surgical procedures better when they use mnemonics, which simplify steps into easy-to-remember phrases.

ANSWER KEY

790. b **791.** a **792.** a **793.** b

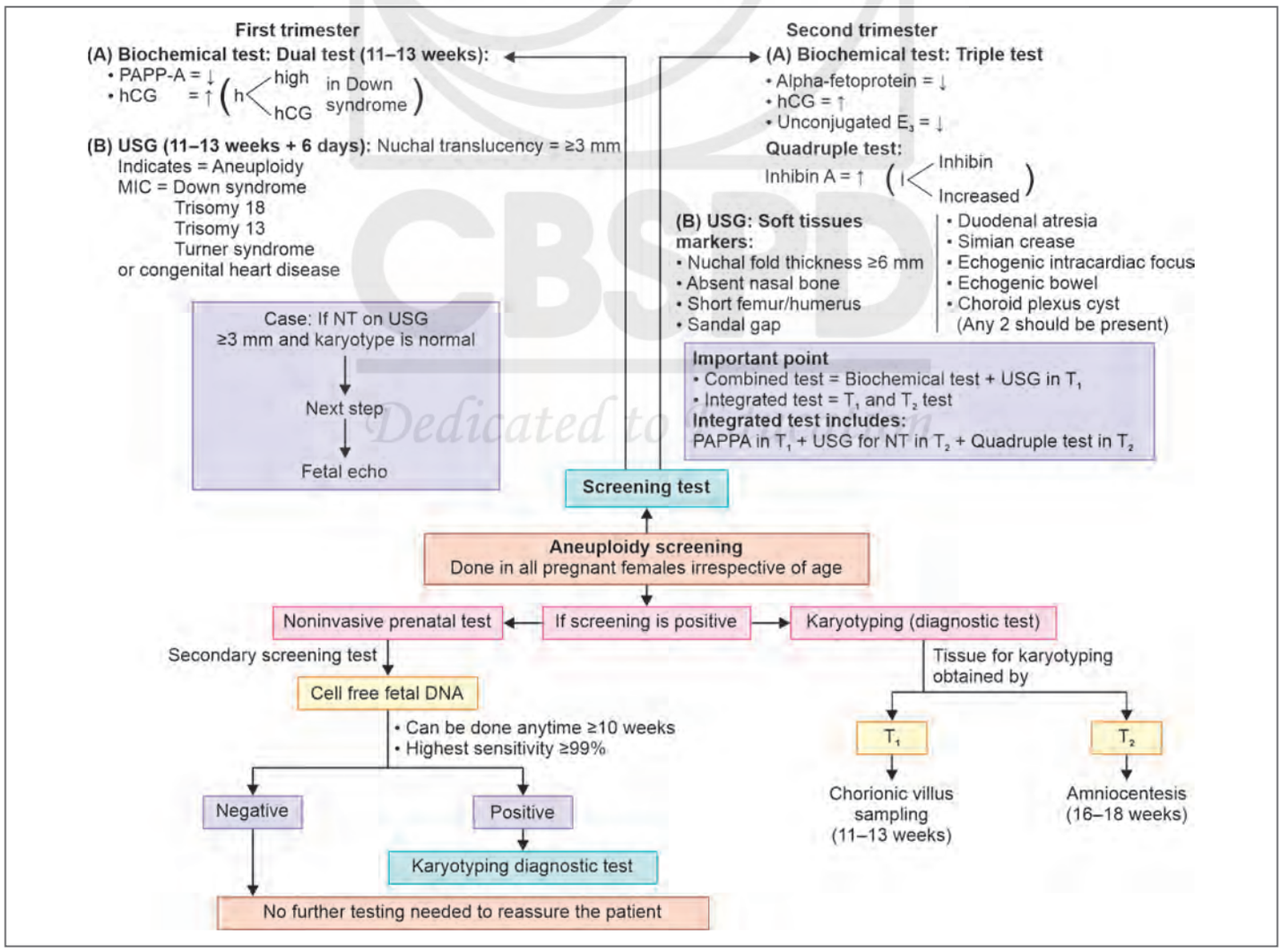
OBSTETRICS AND GYNECOLOGY

— *Dr Sakshi Arora Hans*

SYNOPSIS

OBSTETRICS

ANEUPLOIDY SCREENING



Heart disease where pregnancy is contraindicated (WHO category)

1. LV ejection fraction <30%.
2. Severe mitral stenosis (Valve area <1.5 cm^2)
3. Severe aortic stenosis (Valve area <1 cm^2)
4. NYHA grade 3/4
5. Marfan syndrome with aortic root dilatation (≥4 cm)
6. Coarctation of aorta
7. Pulmonary hypertension
   - Primary
   - Secondary: Eisenmenger syndrome
8. Peripartum cardiomyopathy with residual defects
9. Fontan surgery with residual defect

Most Common in Heart Disease

M/C Heart disease in pregnancy
Cause: Rheumatic heart disease
Lesion: Mitral stenosis
Second M/C heart disease in pregnancy
Cause: Congenital heart disease
Lesion: Atrial septal defect
M/C congenital valvular HD in pregnancy
Mitral valve prolapse
M/C cyanotic congenital HD in pregnancy
Tetralogy of Fallot
HD with maximum risk of maternal mortality
Eisenmenger syndrome
M/C time of death in patients of Eisenmenger syndrome
At the time of delivery or within 1 week of delivery
M/C maternal mortality is seen with which HD in pregnancy
Mitral stenosis

Management of HD in Labor

1. **Preferred mode of delivery in heart disease patients**—Vaginal delivery
2. **Induction of labor**—safe
3. **Inducing agent**
   Cervix is ripe: Oxytocin
   Cervix is not ripe: Foley catheter
   Preferred agent: Misoprostol
   Relative C/I: Dinoprostone
4. **Delivery position**—semi recumbent position with left lateral tilt
5. **For pain relief**—(mandatory pain relief): Epidural analgesia
6. **IV fluid during labor**—restrict to 1 mL/kg/hr
7. **2nd stage of labor**—should be cut short using forceps or vacuum. Forceps preferred.
8. **3rd stage of labor**—AMTSL—done
   - Methylergometrine is contraindicated
   - Oxytocin can be used
   - In case of MS give diuretics

Heart Diseases where Cesarean Section is Mandatory
Any heart disease where aorta is involved, e.g.,

- Severe AS
- Aortic aneurysm
- Marfan syndrome with aortic root dilatation
- If patient is on Warfarin at the time of delivery or within 2 weeks of delivery

Prophylaxis for infective endocarditis in heart disease patients
Not routinely given

Indications

1. To all HD patients undergoing cesarean delivery
2. To HD patients undergoing vaginal delivery with following conditions:
   - Previous H/O infective endocarditis
   - Occurrence of valvulopathy after heart transplant
   - Prosthetic heart valve
   - In case of congenital heart disease if:
     - It is unrepaired
     - Repaired within 6 months
     - Repaired but residual defect present

DOC for Infective endocarditis: Ampicillin or Amoxicillin
In case of mitral stenosis:

- Ideally a female should conceive after surgical repair
- But if in pregnancy patient develops severe MS (area of valve <1.5 cm^2)—advise β-blocker drugs to decrease heart rate and ↑LA filling time
- If medical management fails
  Next step: Balloon valvotomy done in T_2.
- Valve replacement is C/I in pregnancy

TERATOGENIC DRUGS

Drugs	Teratogenicity
1. Alcohol	Goa's: Growth Restriction Famous: Abnormal facial features (smooth philtrum, thin vermilion border, small epicanthal folds). Beer: Abnormal brain development microcephaly. Bar: Abnormal behavioral development
2. Phenytoin	Fetal hydantoin syndrome (i) Midfacial hypoplasia (ii) Upturned nose (iii) Distal digital hypoplasia (Hypoplastic phalanges) ± cardiac defects
3. ACE inhibitors/ Angiotensin Receptor Blocker	• Renal hypoplasia/Renal agenesis • Oligohydramnios in T_2
4. Lithium	Ebstein anomaly (Apical displacement of Tricuspid valve → Tricuspid Regurgitation and Right atrial enlargement) In neonates it can lead to Floppy infant syndrome, diabetes insipidus and hypoglycemia
5. Isotretinoin	Microtia/Anotia
6. Thalidomide	Phocomelia (Proximal limb amputation) Stillbirth
7. Warfarin	DI SALA syndrome • Chondrodysplasia • Stippled Epiphysis • Nasal hypoplasia • CNS- Agenesis of corpus callosum
8. Methotrexate	Craniosynostosis: Cloverleaf skull

Contd…

ECTOPIC PREGNANCY

M/c site: Fallopian tube (Ampulla)
M/c nontubal site: Ovary
Least common site: Cesarean scar ectopic and cervical ectopic
Cornual pregnancy: Ectopic in isthmus of tube
Heterotopic pregnancy: Twin pregnancy; one is intrauterine, other ectopic (Mgt = always surgical)

TRIAD of Symptoms
Amenorrhea (6–10 weeks), pain in lower abdomen and bleeding P/V

Symptoms
To suspect ruptured ectopic
1. Shoulder Tip pain
2. Syncopal attack/orthostatic hypotension
3. Urge to defecate

Named criteria

Site	Criteria
Cervical	Palman, rubin
Abdominal	Studdiform
Ovarian	Spiegelberg

Signs: Ruptured ectopic
1. Shock (↑P/R; ↓BP)
2. P/A = Abdominal distension; rebound tenderness
3. Localizing signs: Guarding, Rigidity

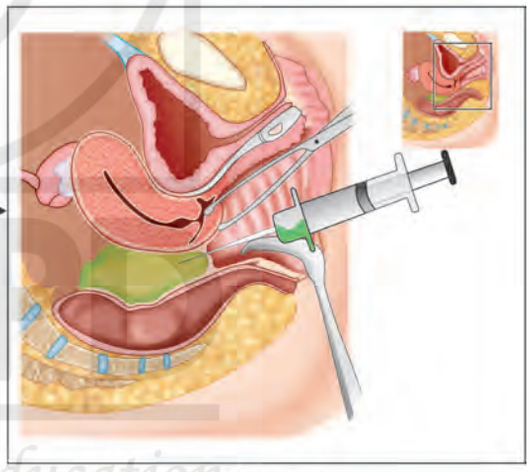
Ectopic pregnancy

Risk factors
Maximum risk:
- Previous H/O ectopic
- Tubal surgery

M/c:
PID
Others:
- IVF
- Cervicitis
- Smoking
- DES

Contraceptives:
Decrease absolute risk of ectopic but if failure of contraception occurs, then ectopic preg risk is increased
M/c: Tubal sterilization > MIRENA > IUCD > POP

P/V Findings
- **Most important:** Adnexal mass
- Cervical movement tenderness d/t peritonitis
  (Cervical motion tenderness is also seen in PID)
- Uterus is soft and enlarged but size is less than POG



Culdocentesis
↓
Detects intraperitoneal bleeding

Case
Female with 6–8 weeks amenorrhea, pain in abdomen, spotting, vitals unstable, UPT+ve
↓
Next step:
Resuscitate + P/A examination
- **If on P/A: Guarding and rigidity present:** Immediate surgical management of ruptured ectopic
- **If guarding and rigidity are not present:** Do FAST USG as intraperitoneal bleeding can be seen on FAST. Once diagnosis is confirmed, then do surgery

Management of Ruptured Ectopic

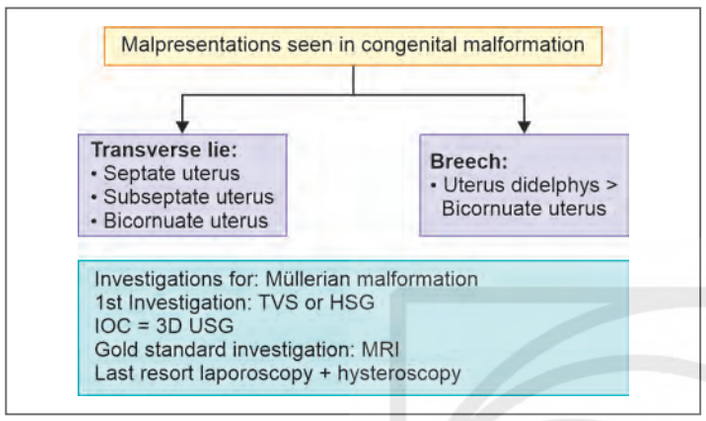
- Always surgical
- No role of conservative management or medical management
- **Route of surgery:**
  If vitals stable: Laparoscopy/Laparotomy
  If unstable vitals: Laparotomy
- **Surgery of choice:**
  Unilateral SALPINGECTOMY
- Surgeries never done: For ruptured ectopic
  1. Salpingo-oophorectomy
  2. Linear salpingostomy (Done for unruptured ectopic)

Investigations Done in Unruptured Ectopic

1. **TVS:**
   Confirmed sign of Ectopic pregnancy: G: Sac + Y: Sac ± cardiac activity seen in fallopian tube
   Suspicion of Ectopic if:
   - Complex adnexal mass
   - Ring of fire on Doppler
   - Empty uterus
   - GSac without Yolk sac in tube.

   (Seen on USG)
2. **β-hCG:**
   Critical value of hCG is that value of hCG above which in all intrauterine pregnancies, G: Sac is visible inside uterus
   TVS = 2000 I/U
   TAS = 6500 I/U

Malpresentations seen in Congenital Malformation



Gynae Complications with Müllerian Malformation
- Infertility
- Outflow tract obstruction → hematometra
- Endometriosis
- Dysmenorrhea

Obstetric Complications with Müllerian Malformation
- Recurrent pregnancy loss (RR)
- Preterm labor
- Malpresentation

M/C complication: RPL

Specific Complaints in Unicornuate Uterus
- Unilateral dysmenorrhea
- Ectopic pregnancy
- Ectopic ovary
- U/L Renal anomalies

Relevant Embryology

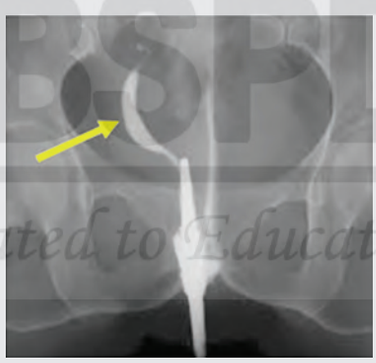
1. Major part of female genital tract is derived from Müllerian duct.
2. Müllerian duct: Invagination of coelomic epithelium (at 6 weeks).
3. Each MD gives rise to that side FT, half of uterus, half of cervix and upper half of vagina.
4. At 10 weeks: Right and left MD approach in midline and fuse with each to form a septa.
5. Fusion begins in below upward direction.
6. At 20 weeks: The septa dissolves (from below upward). A single uterine cavity is now formed.
7. Last step: Fundus of uterus becomes dome shaped.

Vaginal development:

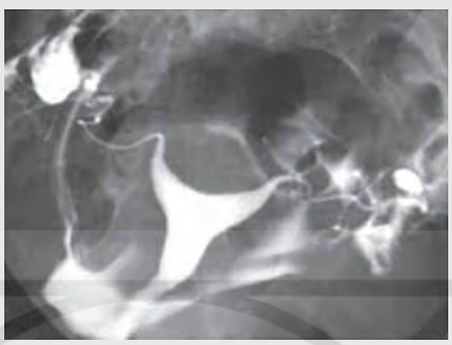
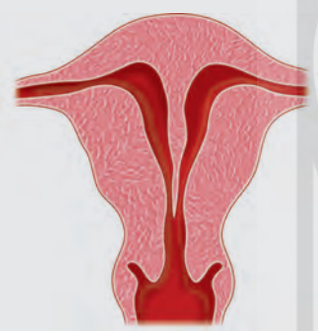
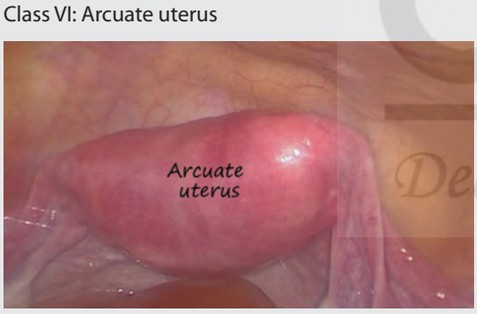
Upper part: Müllerian duct

Lower part: Sinovaginal bulb of urogenital sinus

Müllerian Malformations

CLASS	HSG Image	Comment
Class I: Müllerian agenesis	–	• Both MD Absent • Ovary presents as it arises from genital ridge
Class II: Unicornuate uterus	 **Unicornuate uterus**	• Single MD • Single fallopian tube **On HSG** • Single FT • Half of uterus • Half of cervix and • Half of upper vagina • Banana shaped uterus
Class III: Uterus didelphys 	 **Uterus didelphys**	• Both MD are present but fail to fuse. Hence 2 vagina seen • It is the only condition where 2 vagina are present • Hence on HSG 2 Leech Wilkinson Cannula used

Contd…

CLASS	HSG Image	Comment
Class IV: Bicornuate Uterus (Grossly: Fundus of uterus is divided into 2 parts) 	 **HSG of bicornuate uterus** • Angle between uterine horns: Obtuse • Distance between horns ≥4 cm	• MD Start fusing but fusion is incomplete. • There are two uterine horns and single vagina. • Cervix could be one or two 1. If there is single cervix: Unicollis 2. If 2 cervix: Bicollis
Class V: Septate uterus (Grossly: Fundus of uterus is not divided)  **Note:** Fundus of uterus fused in septate uterus.	 **Septate uterus** • Angle between uterine horns: Acute • Distance between horns <4 cm	• Both MD fused • Septa is formed • But Septa fails to resolve • There are 2 uterine horns and single vagina 1. On HSG: It is difficult to differentiate between septate and bicornuate uterus 2. To differentiate between them fundus of uterus should be visible **In bicornuate:** Fundus is divided **In septate:** It is not divided
Class VI: Arcuate uterus 	 **Arcuate uterus**	• Flat topped uterus or there is slightly dipped fundus • Best reproductive outcome
Class VII: In utero exposure to Diethylstilbestrol (DES)		• M/C malignancy a/w DES: Clear cell cancer of cervix and vagina • M/C uterine malformation a/w DES: Hypoplastic uterus • Most specific uterine malformation a/w DES: T shaped uterus • DES exposure does not lead to renal anomalies in female fetuses.

Multiple Choice Questions

(including explained and practice questions)

TEN into TEN

Track your Preparation

Now you can track your preparation by evaluating each and every question Topic-wise.

Kudos! You were right | Oh! Still doubtful | Oh No! Wrong answer

Dr Sakshi Arora Hans

OBG

OBSTETRICS

[Total Questions 526]

ANATOMY AND PHYSIOLOGY OF REPRODUCTIVE ORGANS

1. Which of the following vessels will serve as an alternate source of blood supply to prevent uterine ischemia, in case the primary artery is ligated in the event of PPH? ***(INI-CET NOV 2023)***

a. Ovarian artery
b. Uterine artery
c. Arcuate artery
d. Round ligament artery

[Ref: DC Dutta's Textbook of Obstetrics, 10th ed., p. 389–392]

2. SRY region is located in: ***(INI-CET MAY 2023)***

a. Short arm of Y chromosome
b. Short arm of X chromosome
c. Long arm of Y chromosome
d. Long arm of X chromosome

[Ref: William's Gynecology, 4th ed.; p. 408]

Explanation: Y-chromosome determines testes formation as **testis-determining factor (TDF)** is located on **short arm of chromosome Y**. TDF is controlled by SRY gene (sex-determining region of Y chromosome).

The TDF differentiates Sertoli cells that start producing **anti-Müllerian substance** (AMS) or hormone. Anti-Müllerian substance inhibits development of the Müllerian ducts.

Thus, absence of Y-chromosome (SRY gene) or TDF results in the formation of ovary.

TDF also helps in differentiation of Leydig cells from mesoderm of gonadal ridge. Leydig cells start secreting testosterone and dihydrotestosterone 8 weeks onward next testosterone stimulates growth of mesonephric duct that forms male genital duct system. Dihydrotestosterone helps in formation of penis, penile urethra, prostate and scrotum.

3. In a 46XY female, on doing amniocentesis complete gonadal dysgenesis was noted. Complete gonadal dysgenesis is caused by which of the following in the SRY gene? ***(INI-CET MAY 2023)***

a. Point mutation
b. Deletion of gene
c. Translation
d. Inversion

[Ref: William's Gynecology, 4th ed., p. 413]

Explanation: **Pure gonadal dysgenesis** results from a **point mutation in SRY/SRY deletion** or point mutations in another gene with testis-determining effects **(DAX-1, SF-1, CBX2)**. This leads to underdeveloped dysgenetic gonads that fail to produce androgens or AMH. This is characterized by a normal prepubertal female phenotype and a normal müllerian system due to absent AMH.

Amongst the given options, a point mutation in the SRY gene is most likely to result in complete gonadal dysgenesis but this answer remains controversial as some other sources mention SRY deletion is more commonly associated. The most common cause attributable to about 85% of cases is still idiopathic.

4. Which of the following is incorrect regarding innervation of the uterus? ***(INI-CET MAY 2022)***

a. Sensory level is from T10 to L1.
b. Uterine contractility is mediated by innervations from level T7-T8.
c. In the 1st stage of labor, pain is due to the fibers at level of T10 to L1.
d. In early labor, pain is usually because of the uterine contraction.

[Ref: DC Dutta's Textbook of Obstetrics, 10th ed., p. 6]

Explanation: The hormonal mechanisms mainly responsible for uterine contraction. The hormones which cause contractions are estrogen, prostaglandin and oxytocin, while relaxation caused by progesterone.

Uterine sensory supply is by ascending afferent fibers which is pass through the inferior hypogastric plexus and enters the spinal cord through T10-T12 and L1 roots.

Labor pain is due to stimulation of nocicepetors in the genital tract caused by ischemia.

- **First stage labor:** Pain is mediated by T10 to L1 spinal segments. It is caused by distension of the cervix and low uterine segment along with isometric uterine contraction.
- **Second stage labor:** Pain is carried by T12 to L1 and S2 to S4 spinal segments. It is caused by tissue damage in the pelvis and perineum.

DID YOU KNOW?

Chunking information helps in making learning less overwhelming and improves recall during exams.

ANSWER KEY

1. a **2.** a **3.** a **4.** b

Explanation: The image of Partogram given is NEW Partogram with cephalopelvic disproportion

Old partogram	New partogram
Latent Phase is induced	Latent phase is Removed
Square box = 1hour	2 Square box = 1 hour
Acute phase starts from 3 cm	Active phase starts from 4 cm

408. A 35-year-old primigravida conceived after IVF cycles she attends ANC check-up with 38 weeks POG. Her obstetric details reveal DCDA twins with 1st twin as a breech. On examination; BP >140/90 mm Hg on two occasions with proteinuria +1. How do you manage? ***(NEET PG 2020)***

a. Watch out for BP and terminate when BP gets elevated.
b. Watch out for BP and induce on the EDD
c. Immediate C section
d. Induction of labor

[Ref: Williams Obstetrics, 25th ed., p. 458]

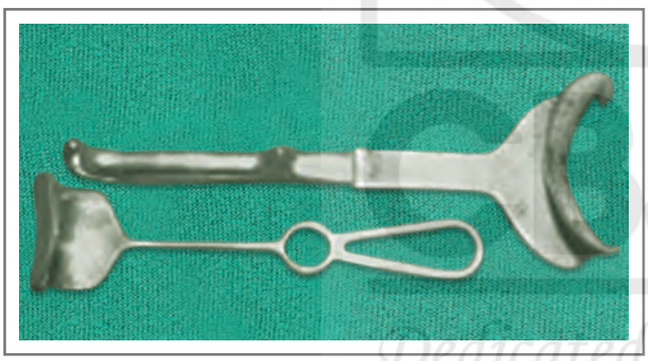
409. In atonic PPH, which of the following is done? ***(AIIMS NOV 2019)***

1. Uterine massage is first step in the management
2. Suction of uterus
3. IV Methyl Ergometrine is given to all patients
4. B-Lynch suture is put if medical management fails

a. 1, 2, 3 are correct
b. 1 and 3 are correct
c. 2 and 4 are correct
d. All four (1, 2, 3, and 4) are correct

[Ref: Williams Obstetrics, 25th ed., p. 793]

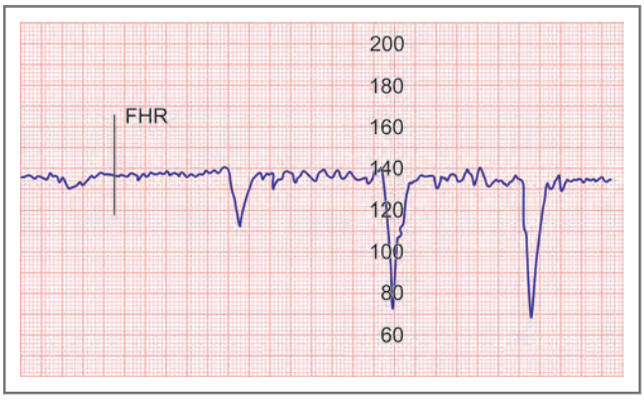
410. The following instrument is used in: ***(AIIMS NOV 2019)***



a. Cesarean section
b. Vaginal hysterectomy
c. Fothergill surgery
d. Suction evacuation

[Ref: DC Dutta's Textbook of Obstetrics, 9th ed., p. 616]

411. What does the CTG graph show? ***(AIIMS NOV 2019)***



a. Deceleration in cardiotopography
b. Acceleration in cardiotopography
c. Cannot be said
d. Normal cardiotopography

[Ref: Williams Obstetrics, 25th ed., p. 335–339]

412. Which of the following is not a contraindication for induction of labor? ***(NEET PG 2019)***

a. Pelvic tumor
b. Herpes infection
c. Heart disease
d. History of lower transverse cesarean section in last two pregnancies

[Ref: Williams Obstetrics, 25th ed., p. 503]

Explanation:

- Heart disease is currently not considered a contraindication for induction, and vaginal delivery is preferred.
- **Induction:** Implies stimulation of contractions before the spontaneous onset of labor.

Indications and Contraindications of Induction of labor (IOL)

Indications	Contraindications
• ROM at term	• Previous cesarean with a classical uterine incision
• Non-reassuring fetal heart rate	• Malpresentation (breech)
• Oligohydramnios	• Placenta or vasa previa
• Prolonged pregnancy (post-term)	• Estimated Fetal Weight >4500 g
• Rh alloimmunization	• Severe fetal hydrocephalus
• Placental insufficiency	• Active genital herpes
• Gestational hypertension	• Prior uterine surgery involving the myometrium
• Diabetes mellitus	• Cervical cancer
• Intrauterine growth restriction	

413. Which is true about normal partography?

a. Latent phase is till 5 cm cervical dilation
b. First stage is till the full cervical dilatation
c. Used mainly for maternal BP monitoring
d. Rate of dilatation in latent phase is 1 cm/h

[Ref: Dutta's Obstetrics, 9th ed., p. 491–493]

414. WHO modified partogram charting starts at cervical dilatation of:

a. 2 cm
b. 3 cm
c. 4 cm
d. 5 cm

[Ref: Dutta's Obstetrics, 9th ed., p. 491; Holland and Brews Obstetrics, 4th ed., p. 278]

415. Mrs S (G2 L1) presented to the hospital in labor pains. On examination, she had 3 uterine contractions of 20 seconds in 10 minutes, cervical dilation was 6 cm and HR 145 bpm. What is the stage of labor?

a. Stage I
b. Stage II
c. Stage III
d. Stage IV

[Ref: Dutta's Obstetrics, 9th/e, p. 113–115; Holland Brew's Obstetrics, 4th ed., p. 270–271; Williams Obstetrics, 24th ed., p. 412–417]

ANSWER KEY

408. c **409.** c **410.** a **411.** a **412.** c **413.** b
414. c **415.** a

520. Hess's formula is used in pregnancy to:

a. Estimate fetal age
b. Identify fetal blood group
c. Identify fetal congenital malformations
d. Identify fetal sex

[Ref: Dutta's Obstetrics, 9th ed., p. 37; Forensic Medicine & Toxicology, K.S.N. Reddy 33rd ed., p. 84]

Explanation: **Hess's rule:**

- Used in pregnancy to estimate fetal age from the fetal length.
- States that the square of the number of calendar months of gestation gives the length of the fetus in centimeters up to 5th month.
- The length of the fetus is determined by:
  - Crown-rump length (from the vertex to the coccyx) in earlier weeks
  - Crown-heel length (from the vertex to the heel) from the end of 20th week onward
- After 5th month, however, the number of months should be multiplied by 5, which gives the length in centimeters.
- Thus, the fetal age can be estimated from the fetal length as follows:
  - Up to 5th month or 20th week— by square root of the crown-rump length
  - After 5th month— by dividing the crown-heel length by 5

521. According to the Registrar General of India, the most common cause of IMR in India is:

a. Prematurity
b. Diarrhea
c. Malnutrition
d. Acute respiratory infection

[Ref: Park's Textbook of Preventive & Social Medicine, 23rd ed., p.569]

522. Which obstetric instrument has been shown in the photograph?

a. Jolls retractor
b. Czerny retractor
c. Morris retractor
d. Deaver retractor

Ref: Internet

Explanation:

Jolls retractor

Czerny retractor

Morris retractor

Deaver's retractor

523. During a suction dilation and curettage (D & C), the surgeons note a midline perforation. If the uterus is not completely evacuated, all of the following options may be indicated; except: New Qs

a. Continue with the same procedure
b. Exploratory laparotomy
c. Perform ultrasound
d. Exploratory laparoscopy

[Ref: Dutta's Obstetrics, 10th ed., p. 523–525]

524. A patient at 17 weeks gestation is diagnosed as having an intrauterine fetal demise. She returns to your hospital 5 weeks later and her vital signs are: blood pressure 110/72 mm Hg, pulse 93 beats/min, temperature 36.38°C, respiratory rate 16 breaths/min. She has not had a miscarriage, although she has had some occasional spotting. Her cervix is closed on examination. This patient is at increased risk for which of the following? New Qs

a. Septic abortion
b. Recurrent abortion
c. Consumptive coagulopathy
d. Future infertility
e. Ectopic pregnancies

[Ref: Dutta's Obstetrics, 10th ed., p. 310–312]

ANSWER KEY

520. a **521.** a **522.** c **523.** a **524.** c

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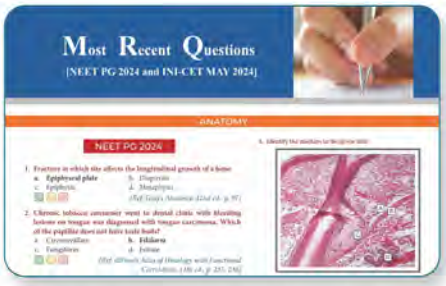
Part B

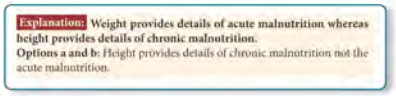
Sl. no.	Subjects Covered	Synopsis (Pages)	Most Recent Qs (2024)	5 Years Recall Qs	Frequently Asked Qs	New Qs	Total Qs
7.	Pediatrics	22	40	173	216	802	1231
8.	Medicine	36	92	462	495	301	1350
9.	Surgery	70	60	318	514	315	1207
10.	Obstetrics and Gynecology	46	61	284	420	273	1038
	Grand Total (Qs)		**253**	**1237**	**1645**	**1691**	**4826**

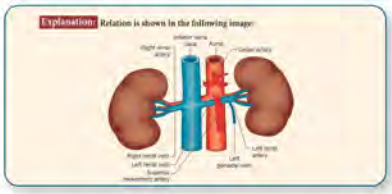
Each subject begins with a concise **Synopsis Highlighting** High-yield Content from an exam perspective.



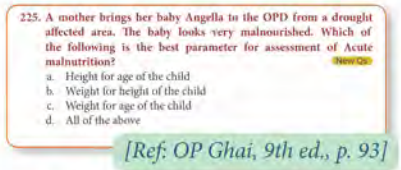
A duly-updated compendium featuring the **Most Recent Questions** up to 2024.

The question bank includes 10,000+ solved questions, organized subject-wise and topic-wise, segregated into 3 parts: 1. Last 5 years recall, 2. Frequently-asked questions, and 3. Newly-created clinical questions making it a comprehensive tool for exam success.

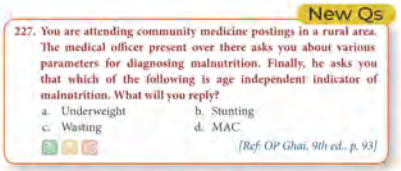




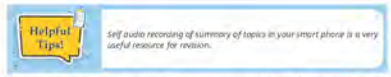
Each question and its answer is accompanied by concise **Explanation** to enhance the clarity of concepts.



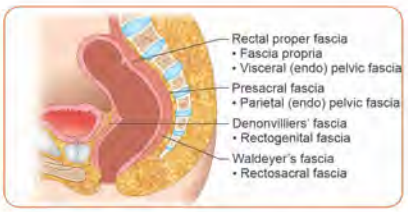
Every question is supplemented with **References** from standard textbooks for authenticity.



New, subject-wise clinical questions have been added, categorized topic-wise as per the latest exam trends



Supplemented with exam preparation related **Helpful Tips** and **Did You Know** facts.



Category	Clean wound	Unclean wound
A	Only wound care	Only wound care
B	Wound care + TT single dose	Wound care + TT single dose
C	Wound care + TT single dose	Wound care + TT single dose + Human Tetanus Immunoglobulin (hTIg)

Vital pedagogical aids, including **Flowcharts, Diagrams, Images, Tables** are added for easy memorization and quick revision.

A topic-wise **Tracking Scale** is included for self-assessment and further progress.

For controversial questions, an Author Desk support is available to resolve doubts.

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