AIIMS ESSENCE

(2019–2015)

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Volume 1

Sixth Edition

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AIIMS Essence (2019–2015) Volume 1

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Dedicated to

My Parents
and
Uncle, Dr CP Singh

Director's Message

Dear Doctor,

Dr. Pritesh Institute is the fastest growing coaching institute for PG medical coaching, NEET-PG/DNB/AIIMS/MCI. Dr. Pritesh Institute has the uniqueness of devotion. It is the most student friendly institute with primary aim to educate and counsel the students to become the best and confident doctors.

We provide specialized courses, which are especially designed by experts in the respective fields and incorporate latest innovation in the field. **Recent advances, new topics, latest innovations, new pattern of questions and image-based questions are being posted on our page and discussed thoroughly by our expert panel of faculty members**. We feel proud to announce that our page is having active interaction with serious and enthusiastic medicos from more than 80 countries across the globe.

We started to leave an indelible mark on the students who have undergone training with us. We started changing lives. And all this was not a sheer coincidence. It was the urge, the compelling desire, to always aspire for perfection and in the process; we continuously kept on setting newer benchmarks of excellence, which enabled us and our students to achieve, what we have achieved. Today, aiming for the unachievable and continuously raising the bar has become a part of the Dr. Pritesh Institute DNA.

The success of our students was inspiring and so was their faith in Dr. Pritesh Institute. It was this faith that was a catalyst in the growth of this institution. It was this faith that prompted us to embark on a mission to provide wholesome education to the students. The students will be trained to be the best in the world through methodologies and practices that are truly world class.

Dr. Pritesh Institute is supported by the faculty, who are not just masters of their subject but have keen interest in teaching. Many of them are the authors of PG entrance examination books and therefore, they are well versed with all the current hot topics, controversies and the latest pattern of NEET and DNB questions. Hence, they themselves put in too much of labor in solving all the controversial questions and in preparing the best possible question papers. With the same amount of effort, the students will feel that they are much better prepared for the exams.

About our publications, Dr. Pritesh Singh's AIIMS ESSENCE is one of the finest book series, considered gold standard book for PG preparation, which provide you with authentic questions along with clear and cogent answers, the assurance given by the references provided with every answer. We take out our own solutions of AIIMS examination in partnership with Jaypee Medical Publishers and our books are available throughout the country. Dr. Pritesh Singh's SURGERY ESSENCE is the best seller for the subject and appreciated by crowd across the globe. We have our team of dedicated students who help us create an authentic recall.

Wishing you all the best for your examination and we are proud to be partners in success with so many PG aspirants for years now.

Dr. Pritesh Kumar Singh
MBBS (MAMC), MS (Surgery),
FMAS, FIAGES
Author of Surgery Essence,
AIIMS Essence, NEET Essence
and Delhi PG Entrance Examination Book
Faculty of National Fame

Preface to the Sixth Edition

First of all I would like to thank all my students for their help and contribution and making the book as bestseller and for their constant feedback regarding the improvement of the book.

I can proudly say that all my students have contributed a lot to get me to this place, where I am today. They have helped me in becoming a better teacher, a better author and most importantly a better human being. I take this opportunity to thank all of you. The happiness you all give me keeps me telling always to work harder to bring a positive change in the life of my students. This will be reflected in the pages of this book. I always strive to provide a winning edge to my students.

PG entrance examination has made the medical world very competitive and has made it imperative for the students to acquire all the skills and competencies to deliver results. My aim as an author, as a teacher is to provide students with a learning experience which when amalgamated with perseverance and commitment helps them in achieving goals.

Higher education has become necessary, as graduation alone is found inadequate in this highly competitive and dynamic world. Trends in the way, the questions being asked are changing continuously. **AIIMS is the most prestigious institute and the dream destination of all medical PG aspirants.** As an author, I closely follow the kind of questions being asked and the change of pattern of questions in the AIIMS examination. **I am pleased to present the 6th edition of AIIMS Essence replete with new pattern of questions, image-based questions and recent advances. To provide to an edge, image-based questions are discussed thoroughly. Triads, signs, investigation of choices and topics based on "most common" type of questions are included to save your precious time and to help you in revision at the most crucial hours.** The explanations are written in a cogent manner and without any ambiguity. **The explanations have been taken from standard text books available for super specialty and recent journal review articles so that one can get the best preparation without wastage of precious time of going through all those books. This has also helped me to prepare better for the controversial questions which always bring anxiety in the minds of the students.**

Another thing, which needs mention, is that it is very important to solve the latest AIIMS paper well in time before the examination so that the students are aware of the current topics and therefore, can spend the appropriate amount of time on them.

While writing the explanations I had all these things in my mind and hence, the approach was such that the students should not find any difficulty solving this Question Paper and that they get ample time to revise this book and the related topics before the examinations. **The book possesses the truth of authenticity, which is reflected in the references provided along with each of the explanation. If read with the proper attitude and confidence, one would realize that it is not a rocket science to crack the examination.** I will be indebted to those students who will understand the intentions and imbibe them to secure a great rank and a greater future.

Most of us are generally busy in marking the facts which are important in the books without realizing that the effort would go in drain if we do not get the time to revise the same. So the practice of taking only a single reading from any book should be avoided as the net output required to be produced during the examinations is not fulfilled. In this book, such key points and facts have already been highlighted; Image-based questions, colored tables and flow diagrams have been provided.

I am passionate about excellence. Excellence in the field of education and in my efforts to groom my students to make them confident enough, that they lose the fear of failure. Being the director of Dr. Pritesh Institute, we follow the same principle in our institute so that our students should be benefitted most with an extra edge.

I still am not sure about one thing that who is more happy, when a student achieves something, the student or the teacher, but I am very sure that the teacher is more satisfied when he sees his students achieving what they deserve and desire. I am working day and night to get that satisfaction and you have to work equally hard so that you do not let me down.

I always tell my students to dream big but not while sleeping. When you dream of moon, you will at least fall amongst stars. But these dreams should always be accompanied with intelligence and hard work. To guide your work intelligently, this book and the author, both are there with you throughout the year. But the hard work is totally in your hands. Accept responsibility for your life. Know it is you who will get you where you want to go, no one else.

I believe that all my students should know the importance of challenges. Challenges are what make life interesting and overcoming them is what makes life meaningful. For the time being the only challenge that you should be facing is to secure a good rank in the entrance examination. One of the most important keys to success is having the discipline to do what you know you should do, even when you do not feel like doing it. Nobody ever wrote down a plan to be broke, lazy or stupid. These things happen when you do not have a plan.

Extensive revisions have been made to minimize the chances of error but still some mistakes might be there which should be brought to the notice of the authors through e-mail address or in writing.

This book would have remained a dream without the contributors. It is a pleasure now to give outlet to the overflowing appreciation and thanks to all my colleagues, friends, teachers and family because this book is the result of encouragement and guidance from all of them.

I am pleased to acknowledge the overwhelming love I have received from my students, who are my ultimate source of inspiration. Wishing you all the best and looking forward for your feedback and suggestions.

— Pritesh Singh

Preface to the First Edition

I feel immense pleasure while writing the preface to the *Review of AIIMS*. This is not just a book, this is my child and I could see the change in myself, the way I am maturing with this book as a mother matures seeing her child grow. All this is possible because of all my students, the debt I owe to them is incalculable...this book is their book.

During the first year my work was modeled on the stimulus provided by my dreams. Then, in the second year I experienced an elevated sense of responsibility because now I understand the meaning of a teacher and an author with a greater depth. This reminds me what one of the student wrote about me after attending my lecture "**It takes a big heart to help shape little minds**...**The ordinary teacher tells, the good teacher explains, the supreme teacher demonstrates but the great teacher inspires...**"

The moment I read this I felt as if I am on cloud nine but a minute later I realized the gravity of the words which made me realize that I am here for a greater purpose. The students all over the nation look up to me, respect me and my actions and words have an influence on them. **I cherish the kind of relationship which I have with my students and I strive to improve with every passing day.**

With this I want all my students to work hard to achieve their goals. Trust me, dreams do come true if nurtured in a proper way. **Although the seats are limited but are not hypothetical**, **so, the foremost thing is to realize that yes I can reach my dream destination**. Through this book I want to make a small contribution in your life and I shall feel extremely fortunate if I could guide you to help you reach your goal. But the **power to illuminate your future is with you only.**

The relationship, which I have with this book and so, indirectly with all of the PG aspirants is just few years old but it seems that I know you since ages. The reason being that I am always in touch with my students and now I realize what psychology the students have when they take the AIIMS entrance exam. Being in the same profession I have also been through this stage. **AIIMS is definitely the dream destination of most of the PG aspirants but dreams do come true if nurtured in a proper way**.

Another thing, which needs a mention, is that **it is very important to solve the latest AIIMS paper well in time before the exam so that the students will be aware of the current topics and therefore, can spend the appropriate amount of time on them.**

While writing the explanations I had all these things in my mind and hence, the approach was such that the students should not find any difficulty in solving the Question Papers and that they will get ample time to revise this book and the related topics before the exams. The book possesses the truth of authenticity, which reflects in the references provided along with each of the explanation. If read with the proper attitude and confidence, one would realize that it is not a rocket science to crack the exam. I shall be indebted to those students who will understand the intentions and will imbibe them to secure a great rank and a greater future.

The pattern of questions in postgraduate entrance examination has changed after introduction of NEET but when one is thorough with the subject it is a lot easier to secure a good rank in the exam. For that matter, I have incorporated explanations with every question to broaden the scope of the question. The explanations have been written in a cogent manner and without any ambiguity. The sources have been mentioned in the references so that in case of a doubt one can always go back to the textbooks. The explanations have been taken from standard textbooks available for superspecialty and recent journal review articles so that one can get the best preparation without wastage of precious time of going through all those books. This has also helped me to prepare better for the controversial questions which always bring anxiety in the minds of the students.

Most of us are generally busy in marking the facts which are important in the books without realizing that the effort would go in drain if we do not get the time to revise the same. So the practice of taking only a single reading from any book should be avoided as the net output required to be produced during the exams is not fulfilled. In this book, such key points and facts have already been highlighted; Tables and flow diagrams have been provided.

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Acknowledgments

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- Anesthesia: **Dr Usica Singh, Dr Saurabh Mittal, Dr Swati**
- Radiology: **Dr Bipin Daga, Dr Virender Jain, Dr Kundan Patel, Dr Khalil**
- Pediatrics: **Dr Deepali, Dr Rahul Jain, Dr Jiwan Kinkar, Dr Anita Singh, Dr Meenakshi Bothra**
- Ophthalmology: **Dr Sudha Seetharam, Dr Shashwat Ray**
- Pathology: **Dr Parul Gautam, Dr Sushant Soni, Dr Parul Sobti, Dr Tarun Garg, Dr Raghu Ram, Dr Sparsh Gupta**
- Pharmacology: **Dr Gobind Rai Garg, Dr Ankit Gun, Dr Vikash Dhikav, Dr Ashish Ranjan**
- PSM: **Dr Rajat Vohra, Dr Vivek Jain**
- Microbiology: **Dr Rakesh Jha, Dr Shipra Goel, Dr Danish Khan, Dr Neetu Shri, Dr Sonu Panwar**
- Forensic Medicine: **Dr Sumit Tellwar, Dr Vishwajeet, Dr Magendran**
- ENT: **Dr Anuragini, Dr Sanjay Aggarwal, Dr Sarvejeet Singh**
- Orthopedics: **Dr Apurv Mehra, Dr Saurabh Rai, Dr Mukul Mohindra, Dr Himanshu Bhayana**
- Anatomy: **Dr Bijender, Dr Shrikant, Dr Dushyant, Dr Rajesh Kaushal**
- Physiology: **Dr Vivek Naglirker, Dr Naveen**
- Biochemistry: **Dr Namrata Bhutani, Dr Nilesh Chandra, Dr Smily Pahwa**
- Skin: **Dr Saurabh Jindal, Dr Pallavi Ailawadi, Dr Charu Singh, Dr Isha Narang, Dr Manish Soni**
- Psychiatry: **Dr Praveen Tripathi, Dr Prashant Aggarwal, Dr Neha Dua, Dr Manoj**

I express my sincere thanks to my friends **Dr Niket Harsh** (MS, Surgery, MAMC) and **Dr Saurabh Rai** (MS, Orthopedics), with whom I started this project. They provided me explanations for difficult and controversial questions. These two people actually suggested me to start this AIIMS project.

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I am equally grateful to my friend **Dr Sushant Bhanja** (MD, Pediatrics), who gave me moral support and guided me in different matters regarding the topics related to Pediatrics. He has been very kind and patient, while suggesting me the outlines of this project and correcting my doubts.

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I convey my sincere thanks to my staff members, **Mr Sahil Mahajan** (Senior Manager), and **Mr Rajesh Jha** (Business Development Executive).

Last but not the least I want to thank all my students who appreciated me for my work and motivated me and finally to God who made all the things possible.

I convey my sincere thanks to Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India, for their efforts and suggestions, especially Shri Jitendar P Vij (Group Chairman), for helping me through my idea.

From the Publisher's Desk

We request all the readers to provide us their valuable suggestions/errors (if any)

at: *jppgmee@gmail.com*

so as to help us in further improvement of this book in the subsequent edition

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Contents

SPECIAL AIIMS PATTERN QUESTIONS

Multiple Choice Questions

1. **Which of the following supply the nasal septum?**
   - i. Anterior ethmoidal artery
   - ii. Posterior ethmoidal artery
   - iii. Sphenopalatine artery
   - iv. Greater palatine artery
   - v. Superior labial artery

   a. i, ii, iii
   b. i, ii, iii, iv
   c. i, ii, iii, iv, v
   d. ii, iii, iv, v

2. **Which of the following is cartilaginous joint?**
   - i. Costochondral joint
   - ii. Chondrosternal joint
   - iii. Spheno-occipital joint
   - iv. Radioulnar joint
   - v. Manubriosternal joint
   - vi. Symphysis pubis
   - vii. Intervertebral joint
   - viii. Sternoclavicular joint

   a. i, ii, iii, v, vi
   b. i, ii, iii, v, vi, viii
   c. i, ii, iii, v, vi, vii
   d. i, ii, iii, iv, v, vi, vii, viii

3. **Which of the following increases growth hormone secretion?**
   - i. Hypoglycemia
   - ii. Cortisol
   - iii. Obesity
   - iv. Somatostatin
   - v. Glucagon
   - vi. Exercise
   - vii. Fasting
   - viii. Decreased blood free fatty acids

   a. i, v, vi, vii, viii
   b. i, ii, iii, iv, v, vi,
   c. i, ii, iii, vi, vii, viii
   d. i, ii, iii, iv, v, vi, vii, viii

4. **What is the correct order of blood sampling?**
   1. Verification of patient's profile
   2. Labeling at bedside
   3. Sampling
   4. Identification of patient

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

5. **Which of the following are seen in beta-thalassemia major?**
   - i. Anisocytosis
   - ii. Poikilocytosis
   - iii. Codocytes
   - iv. Dacrocytes
   - v. Basophilic stippling
   - vi. Cabot rings
   - vii. Howell-Jolly bodies
   - viii. Nuclear fragments

   a. i, ii, iii, vi, vii, viii
   b. i, ii, iii, iv, v, vi
   c. i, iv, v, vi, vii, viii
   d. i, ii, iii, iv, v, vi, vii, viii

6. **Match the poisonings and the drug of choices:**

i. Organophosphate	A. Atropine
ii. Dhatura poisoning	B. Flumazenil
iii. Acetaminophen poisoning	C. Naloxone
iv. Benzodiazepine poisoning	D. Acetylcysteine
v. Opioid poisoning	E. Physostigmine
vi. carbamate	
vii. Atropine poisoning	
viii. early mushroom poisoning	

   a. i-A, ii-E, iii-D, iv-B, v-C, vi-A, vii-A, viii-A
   b. i-A, ii-E, iii-D, iv-C, v-B, vi-A, vii-E, viii-E
   c. i-A, ii-B, iii-D, iv-C, v-C, vi-A, vii-E, viii-D
   d. i-A, ii-E, iii-D, iv-B, v-C, vi-A, vii-E, viii-A

7. **Match the techniques of sterilization and the indications correctly:**

i. Ethylene oxide	A. Clinical thermometer
ii. Hot air oven	B. Fumigation of OT
iii. Paracetic acid	C. Glass syringe
iv. Isopropyl alcohol	D. Heart lung machine
v. Beta propiolactone	E. Blood & body fluid spillage
vi. Sodium hypochlorite	F. Flexible endoscopes

   a. i-C, ii-D, iii-F, iv-A, v-B, vi-E
   b. i-D, ii-E, iii-F, iv-A, v-B, vi-C
   c. i-D, ii-C, iii-F, iv-A, v-B, vi-E
   d. i-E, ii-C, iii-F, iv-A, v-B, vi-D

8. Match the following declarations with:

1. Geneva	a. Torture
2. Tokya	b. Abortion
3. Oslo	c. Human experimentation
4. Helsinki	d. Ethics

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

9. Match the following:

1. Cocaine	a. Hunan hand
2. LSD	b. White lady
3. Abrus	c. Purple haze
4. Capsaicin	d. Gunchi

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

10. Which of the following statements are true (T) and which of the following statements are true false (F).

i. **Sensitivity: Proportion of persons with the condition who test positive**
ii. **Specificity: Proportion of persons without the condition who test negative**
iii. **Positive predictive value: Proportion of persons with a positive test who have the condition**
iv. **Negative predictive value: Proportion of persons with a negative test who do not have the condition**
v. **Prevalence, sensitivity, and specificity determine predictive value**
vi. **NPV = Prevalence × Sensitivity /(Prevalence × Sensitivity) + (1 − Prevalence)(1 − Specificity)**
vii. **PPV = (1 − Prevalence)(Specificity) /(1 − Prevalence)(Specificity) + (1 − Sensitivity)(Prevalence)**

a. i-T, ii-T, iii-T, iv-T, v-T, vi-F, vii-F
b. i-T, ii-T, iii-F, iv-T, v-T, vi-T, vii-F
c. i-T, ii-F, iii-T, iv-T, v-T, vi-F, vii-T
d. i-F, ii-T, iii-T, iv-T, v-T, vi-F, vii-T

11. Which of the following is increased in Sjögren's syndrome?

i. **Salivary sodium**
ii. **Salivary chloride**
iii. **Salivary IgA**
iv. **Salivary phosphate**
v. **Unstimulated salivary flow rate**
vi. **Stimulated salivary flow rate**

a. i, ii, iii
b. ii, iii, iv,v
c. iii, iv, v, vi
d. i, ii, iii, iv, v, vi

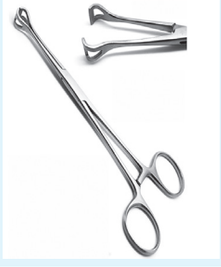
12. Which of the following statement is correct?

Reasoning (R): Blue dye colors the afferent lymphatics & sentinel lymph node, hence aids in the identification

Assertion (A): Sentinel LN is the first LN, which receives lymph directly from tumor

a. Both R and **A** are correct and A is correct explanation for R
b. Both R and **A** are correct but A is not the correct explanation for R
c. R is correct but A is incorrect
d. A is correct but R is incorrect

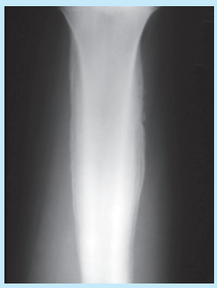
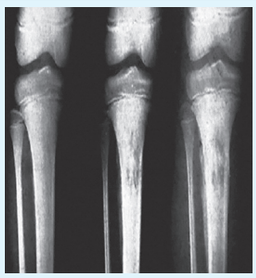
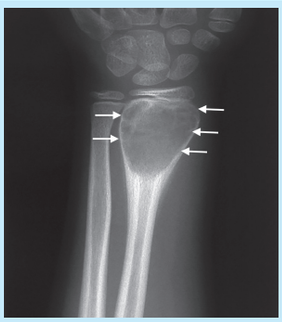
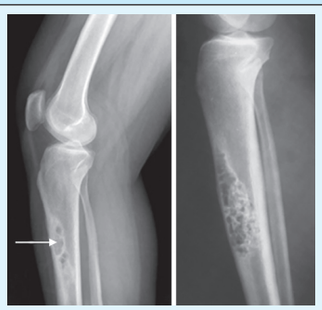
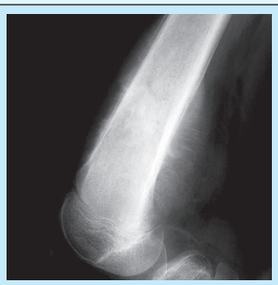
13. Match the following:

i. 
ii. 
iii. 
iv. 

A. Deaver's retractor
B. Babcok's forceps
C. Ovum forceps
D. Czerny's retractor
E. Doyen' retractor
F. Morris retractor

a. i-C, ii-B, iii-A, iv-D
b. i-C, ii-B, iii-A, iv-E
c. i-C, ii-B, iii-A, iv-F
d. i-C, ii-B, iii-F, iv-A

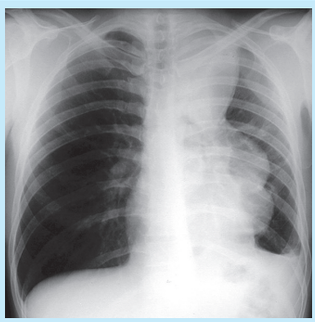
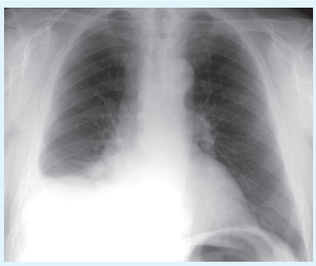
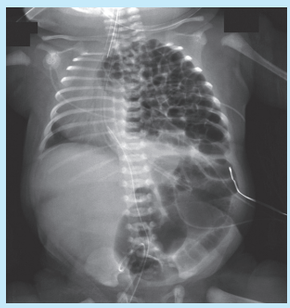
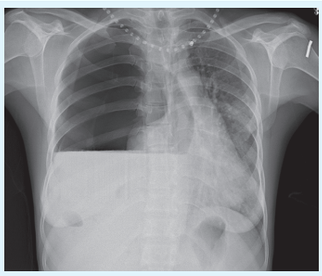
14. Match the following:

i.	
ii.	
iii.	
iv.	
v.	

A. Aneurysmal bone cyst
B. Admantinoma
C. Ewing sarcoma
D. Simple bone cyst
E. Multiple myeloma
F. Acute osteomyelitis
G. Osteosarcoma

a. i-C, ii-F, iii-D, iv-B, v-G
b. i-C, ii-F, iii-A, iv-B, v-F
c. i-C, ii-F, iii-A, iv-B, v-G
d. i-C, ii-F, iii-A, iv-E, v-G

15. Match the following:

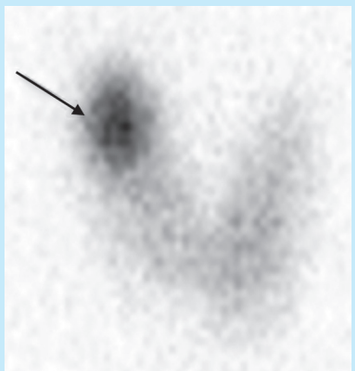
i	
ii	
iii	
iv	

A. Congenital diaphragmatic hernia
B. Emphysema
C. Diaphragmatic eventration
D. Pneumothorax
E. Hydropneumothorax
F. Pleural effusion
G. Consolidation

a. i-D, ii-F, iii-A, iv-B
b. i-D, ii-F, iii-A, iv-C
c. i-D, ii-F, iii-A, iv-G
d. i-D, ii-F, iii-A, iv-E

16. Match the following:

i.



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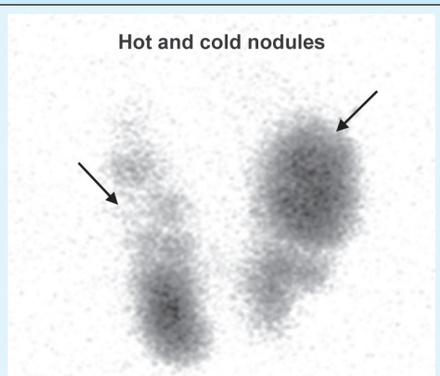
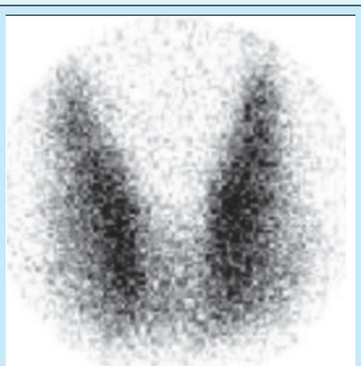


iii.



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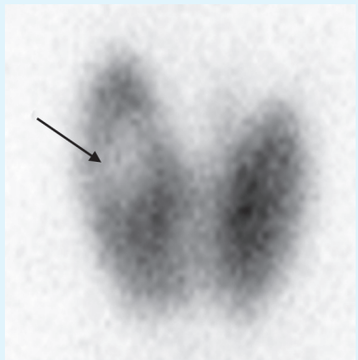


A. Normal thyroid scan
B. Hot nodule
C. Cold nodule
D. Toxic multinodular goiter
E. Grave's disease
F. Autonomous nodule

a. i-B, ii-D, iii-A, iv-E
b. i-B, ii-D, iii-A, iv-C
c. i-B, ii-D, iii-E, iv-F
d. i-B, ii-F, iii-A, iv-D

17. An elderly female had her house destroyed in an earthquake. Following this, she presented to your office with complaints of anxiety, sadness, lack of sleep, anger, palpitations and despair. Consider the following statements:

a. The lady is suffering from acute stress reaction
b. The defense mechanism involved is projection
c. Drug of choice in this situation is risperidone
d. She needs referral to a psychiatrist for psychotherapy

Which of the following statements are true?

a. a & c
b. b & d
c. a, b & c
d. a & d

18. A 22 years old male comes to your office with complains of frequenting checking of doors even when they are locked. He is distressed about this fact. He is subsequently diagnosed to have obsessive compulsive disorder. Consider the following statements:

a. Repression and reaction formation are the defense mechanisms involved
b. SSRIs are the drug of choice
c. Risperidone may be used in SSRI resistant cases to augment the response
d. Systemic desensitization is the psychotherapy of choice

Which of the above are correct statements?

a. a & b
b. b & c
c. b, c & d
d. a, b, c & d

Explanations

1. Ans. c. (i, ii, iii, iv, v): *(Ref: Gray's 41/e p563, 40/e p554; Dhingra 7/e p197)*

Blood Supply of Nasal Septum	
Internal Carotid System	**External Carotid System**
• **Anterior & posterior ethmoidal artery**[Q] (Branch of **ophthalmic artery**[Q])	• **Sphenopalatine artery**[Q] (branch of **maxillary artery**[Q]) gives **nasopalatine & posterior medial nasal branches**[Q]. • Septal branch of **greater palatine artery**[Q] (branch of **maxillary artery**[Q]) • Septal branch of **superior labial artery**[Q] (branch of **facial artery**[Q]).

2. Ans. c. (i, ii, iii, v, vi, vii): *(Ref: BDC 7/e Vol-III/p164)*

Classification of Joints	
Fibrous joints	• **Suture**: Skull • **Syndesmosis**: **Inferior tibiofibular joint**[Q] • **Gomphosis**: **Tooth socket**
Cartilaginous joints	Primary Cartilaginous Joint **(Synchondrosis / hyaline cartilage)**: • **Costochondral joint**[Q] • **1st chondrosternal joint**[Q] • Spheno-occipital joint • Between **epiphysis & diaphysis** Secondary Cartilaginous Joint **(Symphysis / fibrocartilaginous)**: • **Symphysis pubis**[Q] • **Intervertebral joint**[Q] • **Manubriosternal joint**[Q]
Synovial joints	**Plane**: • Intercarpal & intertarsal joint • Between articular process of vertebra **Hinge**: • **Elbow, ankle**[Q] **& interphalyngeal**[Q] joint **Condylar**: • **Knee**[Q]**, TM joint**[Q]**, atlanto-occipital** joint **Pivot (trochoid)**: • **Radioulnar** joint **& atlantoaxial** joint **Ellipsoid**: • **Wrist**[Q] **& MCP joint**[Q] **Saddle (Sellar)**: • **1st carpometacarpal**[Q] joint • **Sternoclavicular**[Q] joint • Calcaneocuboid joint **Ball & socket (THIS)**: • **Talo-calcaneo-navicular** joint • **Hip**[Q] joint • Incudostapedial joint • **Shoulder**[Q] joint

3. Ans. a. (i, v, vi, vii, viii): *(Ref: Ganong 25/e p328; Guyton 13/e p945)*

Growth Hormone

- **GH** is **most abundant anterior pituitary hormone**[Q]
- **GH-secreting somatotrophs** cells constitute **upto 50% of total anterior cell population**[Q]
- **GH** is **released in pulsatile fashion**[Q]

Factors Stimulating GH Secretion	Factors Inhibiting GH Secretion
• **Hypoglycemia**[Q] • **Decreased blood free fatty acids**[Q] • Increased blood amino acids (arginine) • Other conditions causing hypoglycemia: **Stress, fasting & exercise**[Q] • **Deep sleep** (**NREM stage II & IV**)[Q] • **Glucagon**[Q] • **Ghrelin**[Q] • **Hormones:** Vasopressin, Androgen, Estrogen, Dopamine agonists, Thyroid hormones, α adrenergic agonists[Q]	• **Increased blood glucose**[Q] • **Increased blood free fatty acids**[Q] • **Obesity**[Q] • **Somatostatin**[Q] • Insulin like growth factor-1 (**IGF-1**) • **Cortisol**[Q] • **β adrenergic agonists**[Q] • **REM sleep**[Q]

Actions of Growth Hormone	
Direct Actions of GH	**Actions of GH via IGF**
• **Decreased glucose uptake into cells**[Q] • **Increased lipolysis**[Q] • **Increased protein synthesis**[Q] • **Epiphyseal growth**[Q] • **GH promotes Na^+, K^+ & water retention** and elevates serum levels of inorganic phosphate[Q]	• **Increased protein synthesis in chondrocytes**[Q] • **Increased linear growth**[Q] (pubertal growth spurt) • Increased protein synthesis in most organs • Increased organ size • **Antilipolytic**[Q]

4. Ans. b. (4, 1, 3, 2): *(Ref: Practical Medical Procedures at a Glance By Rachel K. Thomas (2015)/p29)*

Correct order of blood sampling: Identification of patient; Verification of patient's profile; Sampling; Labeling at bedside.

Procedure for drawing blood (WHO)	
Step	**Procedure**
1.	**Assemble equipment**, include **needle & syringe or vacuum tube**, depending on which is to be used.
2.	Perform **hand hygiene** (if using soap & water, dry hands with single-use towels).
3.	**Identify & prepare the patient**.
4.	**Select the site**, preferably at the **antecubital area**. Warming the arm with a hot pack, or hanging the hand down may make it easier to see the veins. Palpate the area to locate the anatomic landmarks. **Do not touch the site once alcohol or other antiseptic has been applied.**
5.	**Apply a tourniquet**, about 4–5 finger widths **above the selected venepuncture site**.
6.	Ask the **patient to form a fist** so that the veins are more prominent.
7.	**Put on well-fitting, non-sterile gloves.**
8.	**Disinfect the site** using **70% isopropyl alcohol for 30 seconds** & allow to dry completely (30 sec).
9.	**Anchor the vein by holding the patient's arm** & **placing a thumb below the venepuncture site.**
10.	**Enter the vein** swiftly at a **30 degree angle**.
11.	Once sufficient blood has been collected, **release the tourniquet before withdrawing the needle.**
12.	Withdraw the needle gently and then give the patient a clean gauze or dry cotton-wool ball to apply to the site with gentle pressure.
13.	Discard the used needle & syringe or blood-sampling device into a puncture-resistant container.
14.	**Check the label & forms for accuracy.**
15.	Discard sharps & broken glass into the sharps container. Place items that can drip blood or body fluids into the infectious waste.
16.	Remove gloves & place them in the general waste. Perform hand hygiene. If using soap & water, dry hands with single-use towels.

5. Ans. d. (i, ii, iii, iv, v, vi, vii, viii): *(Ref: Harrison 19/e p81e-1, 638; Henry's Clinical Diagnosis and Management by Laboratory Methods 23/e p588; Robbins 9/e p640)*

Pathologic Red Cells in Blood Smears in β-thalassemia major	
• **Anisocytosis**[Q] • **Poikilocytosis**[Q] • **Target cells (codocytes**[Q]**)** • **Tear drop cells (Dacrocytes**[Q]**)** • **Nucleated RBCs**[Q] • **Basophilic stippling**[Q] • **Ovalocytosis**[Q]	• **Cabot rings**[Q] • **Howell-Jolly bodies**[Q] • **Nuclear fragments**[Q] • **Siderocytes**[Q] • **Aniosochromia**[Q] • **Extreme normoblastosis**[Q]

6. Ans. d. i-A, ii-E, iii-D, iv-B, v-C, vi-A, vii-E, viii-A

Drug of Choice in Poisoning	
• **Organophosphate, carbamate, early mushroom poisoning**	• **Atropine**[Q]
• **Atropine, belladona & dhatura poisoning**	• **Physostigmine**[Q]
• **Acetaminophen poisoning**	• **Acetylcystine**[Q]
• **Benzodiazepine poisoning**	• **Flumazenil**[Q]
• **Opioid poisoning**	• **Naloxone**[Q]
• **Acute iron poisoning**	• **Desferrioxamine**[Q]
• **Chronic iron poisoning**	• **Deferiprone**[Q]
• **Cyanide poisoning**	• **Amyl nitrate**[Q]
• **Beta-blocker poisoning**	• **Glucagon**[Q]
• **TCA** (Amitriptyline, clomipramine & imipramine) **poisoning**	• **IV sodium bicarbonate**[Q]

7. Ans. c. i-D, ii-C, iii-F, iv-A, v-B, vi-E

Techniques of Sterilization	
Steam (**121°C** for **15 minutes**)	Surgical instruments[Q]
Ethylene oxide	**Heart lung machine**[Q], respirators, dental labs
Hot air oven	**Glass syringe**[Q], **test tubes, flasks**[Q], cutting instruments
Irradiation **(gamma rays)**	**Industrial packaging**[Q]
Paracetic acid (STERIS)	**Flexible endoscopes**[Q]
Isopropyl alcohol	**Clinical thermometer**[Q]
Beta propiolactone >Formaldehyde	**Fumigation of OT, labs, wards**[Q]
2% Glutaraldehyde	**Endoscope** (**cystoscope, bronchoscope**)[Q]
Autoclaving	**Culture media, suture materials except catgut**[Q]
Sodium hypochlorite	**Blood & body fluid spillage** in the **operation theatre**

8. Ans. c. (1 =d, 2=a, 3=b, 4=c): *(Ref: Reddy 33/e p26, 400, 647; Parikh 6/e p1.26)*

1. Geneva	**Ethics**
2. Tokyo	**Torture**
3. Oslo	**Abortion**
4. Helsinki	**Human experimentation**

Declaration of **Geneva (1948)**	**Modernized version of Hippocratic oath**[Q]
Declaration of **London (1949)**	International code of **medical ethics**
Declaration of **Helsinki (1964)**	**Human experimentation & clinical trials**[Q]
Declaration of **Sydney (1968)**	Definition of **death** & **recovery of organs**
Declaration of **Oslo (1970)**	**Therapeutic (legalized) abortion**[Q]
Declaration of **Munich (1973)**	**Discrimination in medicine**
Declaration of **Tokyo (1975)**	**Torture & medicine**[Q]
Declaration of **Lisbon (1981)**	**Rights of patients**
Declaration of **Venice (1983)**	**Terminal illness**
Declaration of **Malta (1992)**	**Role of doctors in hunger strikes**
Declaration of **Istanbul (2008)**	**Organ trafficking & transplant tourism**

9. Ans. b. (1 = b, 2 = c, 3 = d, 4 = a): *(Ref: Reddy 33/e p602, 596, 555; Modern Medical Toxicology By Pillay (2012)/p 285; APC Essentials of Forensic Medicine and Toxicology/p509, 536)*

1. Cocaine	**White lady**
2. LSD	**Purple haze**
3. Abrus	**Gunchi**
4. Capsaicin	**Human hand**

"Cocaine: *It is obtained from the* ***leaves of Erythroxylum coca,*** *which grows wild in South America, India, Java, etc.* ***The leaves contain about 0.5 to 1% cocaine.*** *It is a colourless, odourless, crystalline substance with bitter taste.* ***It contains alkaloids ecgonine, hygrine, and cinnamyl cocaine. It is used as local anaesthetic. It is also known as coke, snow, Cadillac and white lady. Crack is prepared by combining cocaine with baking soda and water, which is suitable for smoking."-****Reddy 33/e p602*

"LSD Post-hallucinogen Perception Disorder: A persistent perceptual disorder often described by the person as if he is residing in a bubble under water in a "purple haze" with trailing of lights and images. *Associated anxiety, panic and depression are common."- Modern Medical Toxicology By Pillay (2012)/p 285*

"Abrus precatorius (Ratti, Gunchi, Jequirity, Crab's eye, Rosary pea) is a slender, perennial climber found all over India that twins around trees, shrubs and hedges."-*APC Essentials of Forensic Medicine and Toxicology/p509*

*"****Hunan Hand: Intense burning pain, hyperalgesia, erythema and dermatitis, after handling chili (Capsicum annuum) powder with bare hands.*** *Common in cooks, who prepare food with chilies without using gloves.* ***Hunan hand is so named because it was common in Hunan province of China. Capsaicin releases Substance P, an undecapeptide from afferent sensory neurons causing pain. The symptoms are due to nerve receptor stimulation and not local injury to the skin.****"-APC Forensic Medicine and Toxicology/p536*

10. Ans. a. i-T, ii-T, iii-T, iv-T, v-T, vi-F, vii-F: *(Ref: Park 23/e p125; 22/e p131*

Assessment & Value of A Diagnostic Test

	Condition Present	Condition Absent
Positive Test	**a (True positive)**	**b (False positive)**
Negative Test	**c (False negative)**	**d (True negative)**

Sensitivity	**Proportion of persons with the condition who test positive: a /(a + c)[Q]**
Specificity	**Proportion of persons without the condition who test negative: d /(b + d)[Q]**
Positive predictive value (PPV)	**Proportion of persons with a positive test who have the condition: a /(a + b)[Q]**
Negative predictive value (NPV)	**Proportion of persons with a negative test who do not have the condition: d /(c + d)[Q]**

Predictive Value

- **Prevalence, sensitivity, and specificity determine predictive value[Q]**
- **PPV = Prevalence × Sensitivity /(Prevalence × Sensitivity) + (1 − Prevalence)(1 − Specificity)[Q]**
- **NPV = (1 − Prevalence)(Specificity) /(1 − Prevalence)(Specificity) + (1 − Sensitivity)(Prevalence)[Q]**

11. Ans. a. (i, ii, iii): *(Ref: Harrison 19/e p2166; Oxford Textbook of Rheumatology 4/e p1049; Textbook of Oral & Maxillofacial Surgery (Elsevier)/402*

Salivary Analysis of Patients of Sjögren's syndrome	
Salivary **sodium**	**Increased[Q]**
Salivary **chloride**	**Increased[Q]**
Salivary **IgA**	**Increased[Q]**
Salivary **phosphate**	**Decreased[Q]**
Unstimulated salivary flow rate	**Decreased** (<0.1 mL/min)[Q]
Stimulated salivary flow rate	**Decreased** (<0.5 mL/min)[Q]

12. Ans. a. Both R and A are correct and A is correct explanation for R *(Ref: Harrison 20/e p559; Sabiston 20/e p849-851; Schwartz 10/e p305-306)*

Sentinel Lymph Node Biopsy

- **Sentinel LN: First LN** which **receives lymph directly from tumor**[Q]
- **Cabana** demonstrated the **concept of SLN first** in **carcinoma penis**[Q]
- **SLN biopsy in carcinoma penis is known as Cabana procedure**[Q]
  - **SLN biopsy** is usually done in: **CA breast**[Q]**, CA penis**[Q] & **Malignant melanoma**[Q]
  - **SLN biopsy** is also **applied successfully** in **cancers of head & neck**[Q] and **vulva**[Q]
- **No special OT is required**[Q]
- **Indication of SLN biopsy in breast cancer: Clinically non-palpable axillary LN**[Q]
  - **SLN biopsy** is usually **done intra-operatively** by using **isosulphan blue dye**[Q] (**1% lymphazurin**) or **radioactive (Tc-99 labelled sulphur**[Q]**) colloid**. **Accuracy of detection** of SLN biopsy is **best when both** of the methods **are combined**[Q]**.**
- When **radioactive colloid** is used, the **SLN is detected by gamma-camera**[Q]
- **Blue dye colors the afferent lymphatics** & **SLN**, hence **aids in the identification**[Q]
- Most of the times **>1 SLN in carcinoma breast**[Q]

Contraindication of SLN Biopsy in CA Breast		
Palpable lymphadenopathy[Q]	**Prior axillary surgery, chemotherapy** or **radiotherapy**[Q]	**Multifocal breast cancer**[Q]

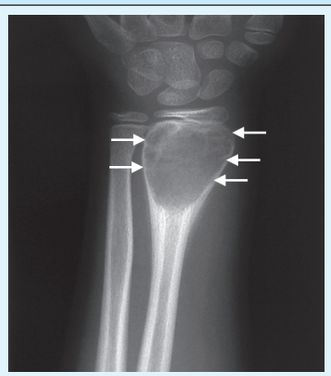
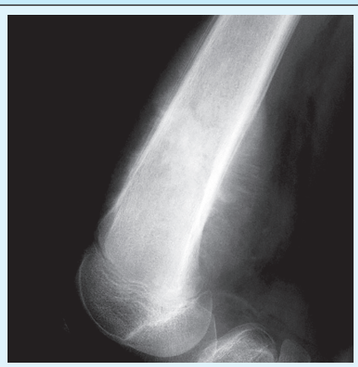
Complications of SLN Biopsy in CA Breast		
• **Skin tattooing**[Q] **(MC)** • **Necrosis**[Q]	• **Urine discoloration** • Anaphylaxis	**Intercostobrachial nerve palsy**[Q] **(MC injured nerve** in SLN biopsy)

13. Ans. c. (i-C, ii-B, iii-A, iv-F)

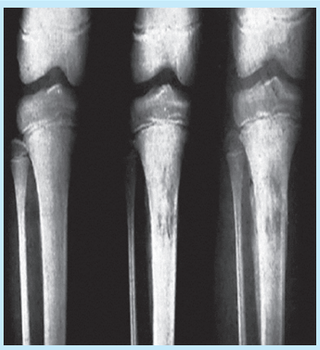
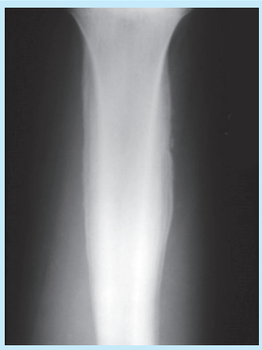
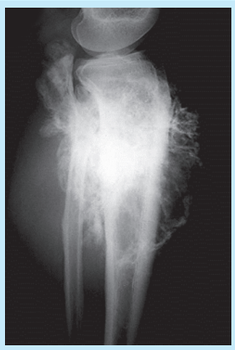
14. Ans. c. (i-C, ii-F, iii-A, iv-B, v-G):

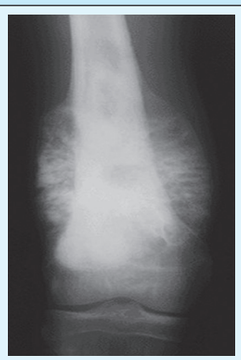
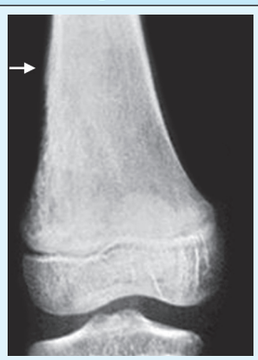
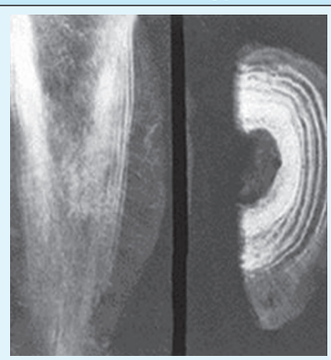
"X-ray (Giant-cell Tumour): Radiolucent area situated eccentrically at the end of a long bone & bounded by subchondral bone plate*. The* ***centre*** *sometimes has a* ***soap-bubble appearance*** *due to ridging of the surrounding bone.* ***Appearance of a 'cystic' lesion in mature bone, extending right up to the subchondral plate, is so characteristic that the diagnosis is seldom in doubt****."- Apley 9/e p202*

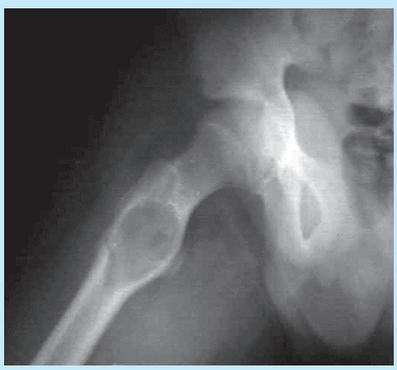
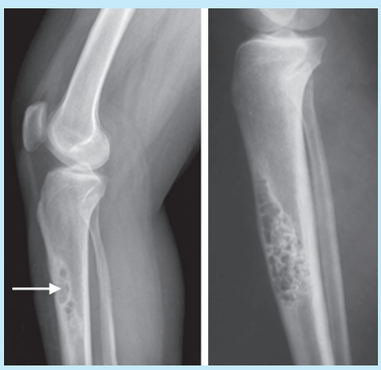
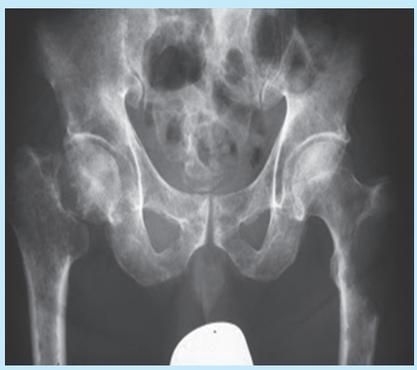
*"****Aneurysmal Bone Cyst: X-rays show a well-defined radiolucent cyst, often trabeculated and eccentrically placed. In a growing tubular bone it is always situated in the metaphysis and therefore may resemble a simple cyst or one of the other cyst-like lesions.****"- Apley 9/e p201*

Aneurysmal Bone Cyst	Osteosarcoma
	

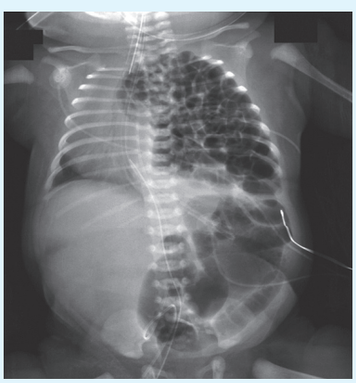
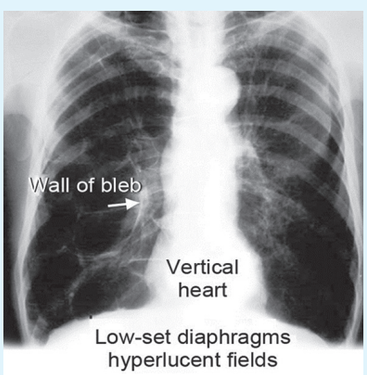
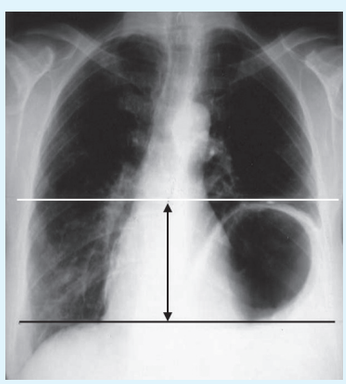
"Osteosarcoma: The x-ray appearances are variable: hazy osteolytic areas may alternate with unusually dense osteoblastic areas. The endosteal margin is poorly defined. Often the cortex is breached and the tumour extends into the adjacent tissues; when this happens, streaks of new bone appear, radiating outwards from the cortex –the so-called 'sunburst' effect. Where the tumour emerges from the cortex, reactive new bone forms at the angles of periosteal elevation (Codman's triangle). While both the sunburst appearance and Codman's triangle are typical of osteosarcoma, they may occasionally be seen in other rapidly growing tumours."- Apley 9/e p207

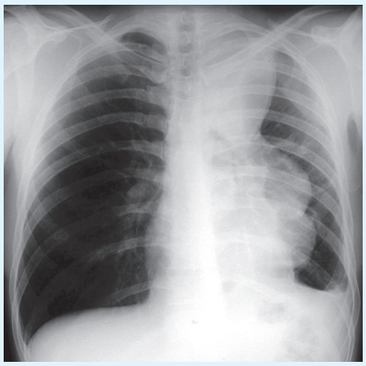
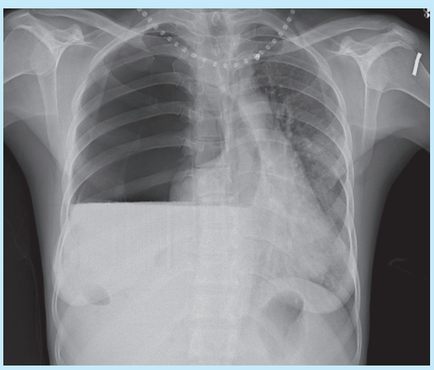
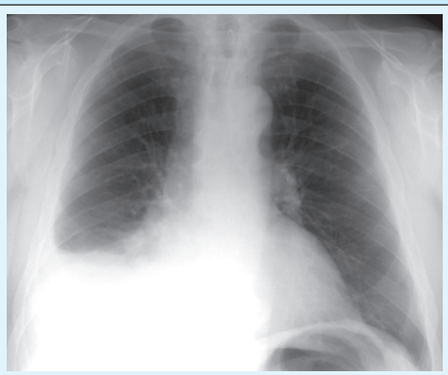
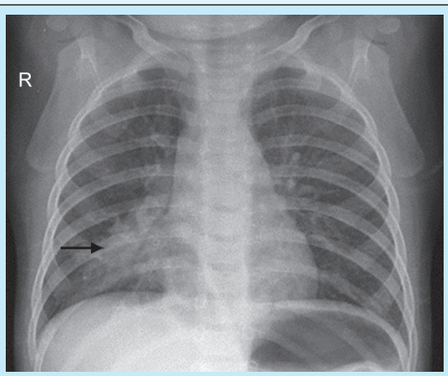
Acute Osteomyelitis	Ewing Sarcomas	Osteosarcoma
• **No abnormality of bone during 1st week** after the onset of symptoms **on plain x-ray**[Q] • **Displacement of fat planes** signifies soft-tissue swelling[Q] • **2nd week**: **Faint extra-cortical outline** due to **periosteal new bone formation** (**classic x-ray sign of early pyogenic osteomyelitis**)[Q] • **Periosteal thickening** becomes more obvious later & **patchy rarefaction of metaphysis**[Q] • **Regional osteoporosis** with **localized segment of apparently increased density** is important **late sign**[Q]	• Area of **bone destruction** predominantly **in mid-diaphysis** on X-rays • **New bone formation** may extend **along shaft** & appears as **fusiform layers of bone around the lesion** (**Onion-peel effect**[Q]) • **Tumour extends into surrounding soft tissues**, with **radiating streaks of ossification (Sunray appearance**[Q]) & **reactive periosteal bone** at **proximal & distal margins** (**Codman's triangles**[Q])	• **Hazy osteolytic areas** alternate with **dense osteoblastic areas**[Q]. • **Endosteal margin** is **poorly defined**[Q]. • **Cortex is breached** & **tumour extends into adjacent tissues**; when this happens, **streaks of new bone appear, radiating outwards from cortex** ('**sunburst' effect**[Q]) • **Tumour emerges from cortex**, **reactive new bone forms at angles of periosteal elevation** (**Codman's triangle**[Q]). • **Sunburst appearance & Codman's triangle are typical of osteosarcoma**[Q] (occasionally seen in other rapidly growing tumours)
		

Interrupted Type of Periosteal Reaction		
Osteosarcoma		Ewing sarcoma
Sunburst Pattern	Codman Triangle	Lamellated or Onion skin type
		

Simple Bone Cyst	Admantinoma	Multiple Myeloma
• **Fills the medullary cavity but does not expand the bone**[Q] • **X-rays: Well-defined radiolucent cyst, often trabeculated & eccentrically placed**[Q]. • In a growing tubular bone it is **always situated in the metaphysis**[Q].	• **X-ray** shows a typical **bubble-like defect in the anterior tibial cortex**; sometimes there is **thickening of the surrounding bone**[Q].	• X-rays: **The 'classical' lesions are multiple punched-out defects with 'soft' margins (lack of new bone) in the skull, pelvis and proximal femur, a crushed vertebra,** or a **solitary lytic tumour in a large-bone metaphysis**[Q].
		

15. Ans. d. (i-D, ii-F, iii-A, iv-E):

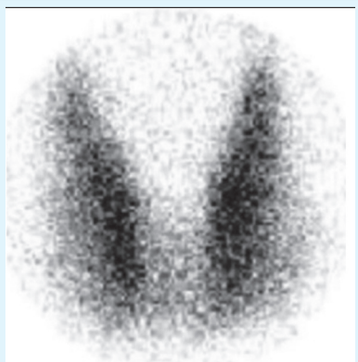
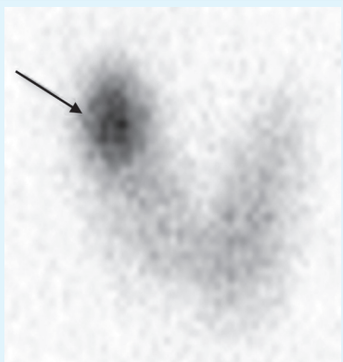
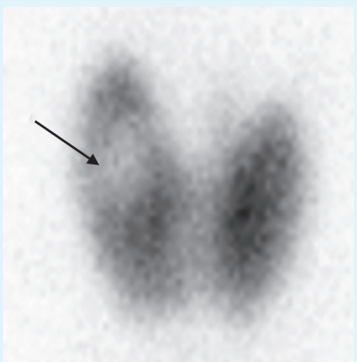
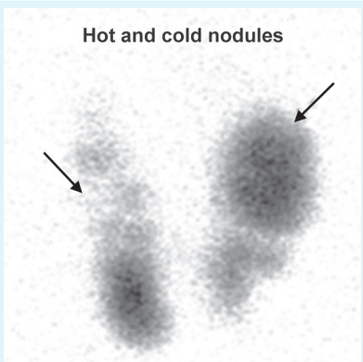
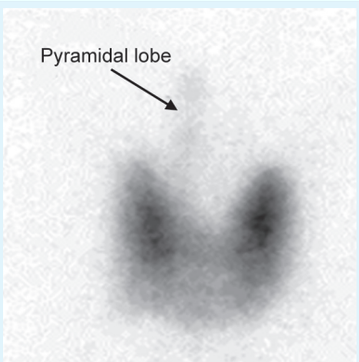
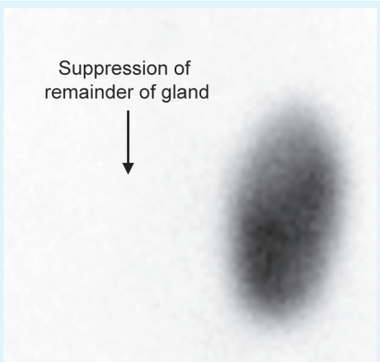
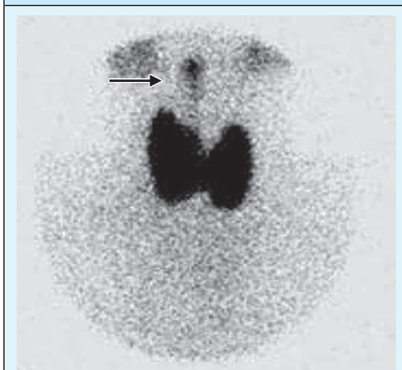
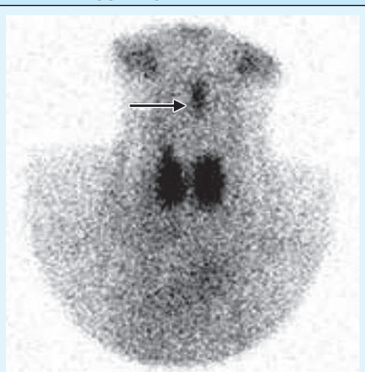
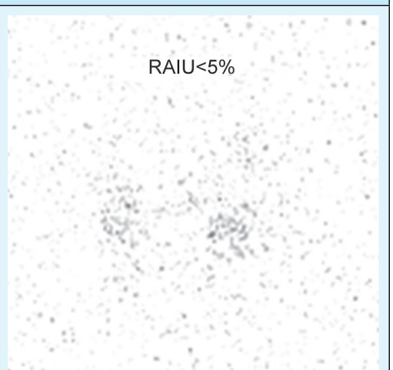
Congenital Diaphragmatic Hernia	Emphysema	Diaphragmatic Eventration
		
• **Indistinct diaphragm** with **opacification of part of or all the hemithorax**[Q] (typically **left sided**[Q])	• **Flattened hemidiaphragm**(s): **Most reliable sign**[Q] • **Increased & usually irregular radiolucency of lungs**[Q] • Increased retrosternal airspace • **Widely spaced ribs**[Q] • **Tenting of diaphragm**[Q] • **Saber-sheath trachea**[Q]	• **Elevation of affected portion of the diaphragm** is usually seen as a **smooth hump**, while the **remainder of the hemidiaphragm contour is normal**[Q]. • **Frontal X-ray: 'Double' diaphragmatic contour**[Q]

Condition	Chest X-ray	Findings
Pneumothorax		• **Visible visceral pleural edge** is seen as a **very thin, sharp white line** • **No lung markings** are **seen peripheral to this line** • **Peripheral space** is **radiolucent compared to adjacent lung** • Lung may completely collapse • Mediastinum should not shift away from the pneumothorax unless a tension pneumothorax is present
Hydropneumothorax		• An **upright chest X-ray** will show **air fluid levels**. • **Horizontal fluid level** is usually **well-defined** & **extends across the whole length of hemithorax**. • **Supine radiograph**: **Sharp pleural line** is bordered by **increased opacity lateral to it within the pleural space**
Pleural effusion		• **Blunting of costophrenic angle** & **cardiophrenic angle** • Fluid within horizontal or oblique fissures • A **meniscus** will be seen, on frontal films **seen laterally & gently sloping medially** • With **large volume effusions**, **mediastinal shift** occurs away from the effusion may occur towards the effusion) • **Lateral films** are able to **identify a smaller amount of fluid,** as the **costophrenic angles are deepest posteriorly.**
Consolidation		**Right middle lobe consolidation (RML):** • **Opacification of RML abutting the horizontal fissure** • **Indistinct right heart border** • **Loss of medial aspect of right hemidiaphragm** • **Air bronchograms** • When the **fissures are outwardly convex**, the appearance is referred to as the **bulging fissure sign.**

16. Ans. b. (i-B, ii-D, iii-A, iv-C): *(Ref: Grainger & Allison Diagnostic Radiology 5/e p860; Bailey 26/e p746; Essentials of Nuclear Medicine Imaging by Fred A Milter/p605; Manual of Endocrinology and Metabolism by Norman Lavin 4/e p495)*

"Scintigraphy: A single toxic nodule shows high uptake of tracer with the remaining normal thyroid tissue showing poor or virtually no activity."*-Grainger & Allison Diagnostic Radiology 5/e p860*

"Toxic adenoma (hyperfunctioning solitary nodule): Thyroid hormone from an adenoma is secreted independent of TSH stimulation. The excessive release of thyroid hormone suppresses the pituitary release of TSH, resulting in diminished activity in the remainder of the gland. On thyroid scan, the toxic adenoma appears as a hot nodule surrounded by little or no thyroid tissue."*-Manual of Endocrinology and Metabolism by Norman Lavin 4/e p495*

Normal Thyroid Scan	Hot Nodule	Cold Nodule
		
Toxic Multinodular Goiter	**Grave's Disease**	**Autonomous Nodule**
		
Ectopic Thyroid Tissue in Euthyroid Patient	**Ectopic Thyroid Tissue in Hypothyroid Patient**	**Thyroiditis**
		

17. Ans. d. a & d: *(Ref: Kaplan & Sadock 11/e p421; Niraj Ahuja 7/e p111)*

Acute stress reaction is a normal experience, usually short lasting and resolves in a few days. Denial is the main defense mechanism. Projection is defense mechanism seen in hallucination and delusion. After acute trauma, psychological intervention can help improving the outcome. When a clinician is faced with a patient who has experienced a significant trauma, the major approaches are: support, encouragement to discuss the event, and education about a variety of coping mechanisms (e.g., relaxation) and requires a psychiatric consultation. Hence, referral to psychiatrist is more important than anti-psychotics like risperidone, though resperidone may be prescribed if the patient is having significant psychosomatic symptoms like palpitations and interference with sleep and appetite.

In DSM-IV, diagnosis of Acute Stress Disorder requires marked symptoms of anxiety or increased arousal, re-experiencing of the event, and three of the following five 'dissociative' symptoms;	
• A sense of **numbing or detachment**[Q] • **Reduced awareness of the surroundings**[Q] • **Derealization**[Q] • **Depersonalization**[Q]	• **Dissociative amnesia**[Q] • **(Avoidance of stimuli** that arouse recollections of trauma & significant distress or impaired social functioning[Q])

Acute Stress Reaction

- It is a **psychological condition arising in response to a terrifying or traumatic event**, or **witnessing a traumatic event** that **arises a strong emotional response** within the individual[Q].
- It may **develop into delayed stress reaction** or better known as **PTSD if stress is not correctly managed**[Q].

Risk factors:

- **Physical exhaustion** and in **extremes of age, female gender**[Q].

Symptoms:

- **Anxiety, depression, anger, despair, over-activity or withdrawal & constriction of field of consciousness**[Q].
- **Resolves rapidly on removal of stressful environment**[Q]
- If the stress continues or cannot be reversed, the **resolution of symptoms begins after 1-2 days**[Q]
- **Symptoms last for a minimum of 2 days & maximum of 4 weeks, after which point continued symptoms may result in a diagnosis of PTSD**[Q].

Diagnosis:

- There must be a **clear temporal connection between the impact of an exceptional stressor** (**such as death of loved one, natural catastrophe, accident, rape**) & **onset of symptoms**; **onset is usually within a few minutes or days** but may occur up to one month after the stressor.
- Symptoms show a **mixed & usually changing picture**
- **Symptoms** usually **resolve rapidly** in those cases where **removal from stressful environment** is possible
- **Avoidance** is the **most frequent coping strategy,** where the **person avoids talking or thinking about the stressful events & avoids reminders of them. The most frequent defense mechanism is denial**[Q].

Treatment:

- This disorder **may resolve itself with time** or may **develop into** a more severe disorder such as **PTSD.**
- **Removal of patient from stressful environment** & helping the patient pass through.
- **Medication** (benzodiazepines/anti-psychotics) can be used for a **short duration**.
- Combination of **relaxation, cognitive restructuring, imaginal exposure** is useful

Post Traumatic Stress Disorder (PTSD)

Intense, prolonged & **protracted or delayed response** to **exceptionally intense stressful events**[Q].

Etiology:

- Events involving **actual or threatened serious injury** or **death** of the person or other
- **Natural disasters**, **man made calamities** & **serious physical assault** or **rape**[Q]

Predisposing Factors for PTSD	
• **Female gender**[Q], neuroticism • **Lower intelligence & lack of support**[Q]	• Previous history of trauma • **Personal history of mood & anxiety disorder**[Q]

Contd…

Contd…

Neurobiological Factors:
- Monoamine neurotransmitters and HPA axis mediate defensive response to stressful events
- **Small hippocampus** leads to dysfunctional & inadequate memory processing while **increased noradrenergic activity of amygdala**, increases arousal & facilitates automatic recall & encoding of traumatic events.

Clinical Presentation:
- May begin **very soon after stressors** or **after an interval of days (usually),** months (occasionally) or rarely >6 months.
- Symptoms must be present for **at least 1 month**, until then it is called acute stress disorder.
- Must leads to **significant distress** or **impaired social functioning**.

- **Flash backs, nightmares & intrusive images** collectively known, as **painful re-experiencing symptoms** along with **avoidance, emotional numbing & fairly constant hyper arousal are most characteristic feature**[Q].

Treatment:
- **Structured psychotherapy** is **more effective than drug treatment**[Q].
- **Counseling** is TOC for **short term PTSD**[Q]
- **Cognitive behaviour therapy** is TOC for **severe long standing PTSD**[Q]
- **Drug treatment: Antidepressants & benzodiazepines** (in low doses for short periods) are useful in treatment, if anxiety and/or depression are important components of the clinical picture.

Rational and Enotive Therapy	It is a **specialized type of CBT, proved to be useful for PTSD.**
Eye movement desensitization and reprocessing (EMDR)	• Relatively new treatment, found to **reduce the symptoms of PTSD.** • EMDR involves **making side- to-side eye movements, usually by following the movement of** therapist's finger, while recalling the traumatic incident.

18. Ans. b. b & c *(Ref: Kaplan & Sadock 11/e p406; Niraj Ahuja 7/e 95-98)*

Frequent checking of door locks is suggestive of OCD. Three major psychological defensive mechanisms that determine the form and quality of obsessive-compulsive symptoms and character traits: Isolation, undoing, and reaction formation. Repression is a primary mechanism and is not involved in OCD. Drug of choice for OCD is SSRI (Fluoxetine, fluvoxamine, paroxetine, sertraline, citalopram). Psychotherapy of choice in OCD is exposure and response prevention rather than systemic desensitization.

*"**Behavior Therapy:** Although few head-to-head comparisons have been made, **behavior therapy is as effective as pharmacotherapies in OCD**, and some data indicate that the **beneficial effects are longer lasting with behavior therapy**. Many clinicians, therefore, consider **behavior therapy the treatment of choice for OCD**. Behavior therapy can be conducted in both outpatient and inpatient settings. **The principal behavioral approaches in OCD are exposure and response prevention**. Desensitization, thought stopping, flooding, implosion therapy, and aversive conditioning have also been used in patients with OCD. In behavior therapy, patients must be truly committed to improvement."- Kaplan & Sadock 11/e p406*

Obsessive Compulsive Disorder (OCD)
- Characterized by **recurrent, intrusive, and distressing thoughts, images or impulses** (**Obsession**) and **repetitive mental or behavioral acts** that the individual **feels driven to perform** (**Compulsion**) to reduce stress.'
- **Defensive mechanisms for OCD**: **Isolation, undoing & reaction formation**[Q]

Obsessive Compulsive Disorder (OCD)	
Obsession	**Compulsion**
• **Recurrent & persistent thought** intrudes into conscious awareness • Recognizes as **one's own idea** but is **Ego-alien** (**foreign to one's personality**) • Attempts to **ignore** or **suppress** but is unable	• **Irresistible repetitive behaviour** • **Acts are aimed at preventing or reducing distress** • Failure to resist leads to **marked distress**

Types of OCD			
1. Washers (MC)[Q]	**2. Checkers**[Q]	**3. Pure obsession**[Q]	**4. Obsession slowness**[Q]

Contd…

Contd…

Characteristic features:

- Persons with OCD are **stubborn, rigid, over conscious** and inflexible about matters or morality & ethics
- **Person is preoccupied with rules, details, list, schedules** to the extent that major point of activity is lost
- Shows perfection that **interferes with task completion**[Q]

Management of OCD

1. Behaviour Therapy (BT):

- **Treatment of choice** for OCD: **Behaviour therapy**[Q]
- **Exposure** & **response prevention is the preferred & principal approach.** It is **most effective in compulsions**[Q]**.**
- For covert compulsions (behaviour/rituals), **imaginal flooding** and **thought stopping** techniques have been used **in conjunction with exposure & response prevention.**
- Systemic desensitization, implosion therapy, modeling, thought stopping flooding and aversive conditioning are other behaviour techniques that can be used in OCD.

2. Pharmacotherapy:

- **Drug of choice: SSRI (Fluoxetine,** fluvoxamine, paroxetine, sertraline, citalopram)[Q]
- **Best results** are achieved when **SSRIs** are used **in combination with behaviour therapy**[Q]**.**
- **Drug of 2nd choice: Clomipramine**

3. Psychotherapy:

- **Psychoanalytic psychotherapy** is used in certain selected patients who are psychologically oriented.
- **Supportive psychotherapy must include attention to family members** through provision of emotional support, reassurance, explanation and advice.

4. ECT:

- For **extreme cases** that are **resistant & chronically debilitating**, **ECT & psychosurgery** are considerations.

5. Psychosurgery:

- Used in treatment of OCD that has become intractable, and is **not responding to other methods of treatment.**
- Procedures: **Stereotactic limbic leucotomy (cingulotomy), stereotactic subcaudate tractotomy (capsulotomy)**