10 YEARS' QUESTION PAPERS FOR 1ST PROF. MBBS EXAM: ANATOMY

SUPERIOR EXTREMITY

GROUP-A(12 MARKS)

1. Describe the intrinsic muscles of the hand. What is total claw hand ? [10+2][2014]
2. Name the nerve involved in the fracture of medial epicondyle of humerus. Describe the course and distribution of the nerve beyond the elbow. Mention sensory and motor disabilities following the nerve injury. [1+6+5][2013]
3. Describe the anatomical features of the female breast in the adults. In case of breast carcinoma, how can you account for : A) Retraction and punching of skin? B)Peau 'd Orange or edema with pitting of the skin over the breast? C) Retraction of nipple? [6+2+2+2]2007]
4. A case of breast tumor in an aged patient presents enlarged nodular swellings in the axilla. How and in what groups are they arranged in the axilla. Name their different efferent and afferent pathways. Which walls of axilla should one avoid draining the pus and why? [6+4+2][2006]
5. Enumerate the ligaments of shoulder joint. How the stability of the joint is maintained? Mention the nerve supply of the joint. Discuss the mechanism of elevation of arm above the head. Which type of dislocation is common and why? [2+2+2+4+2][2016]
6. Describe the brachial plexus under the following headings : roots, trunks, divisions, and cords. What do you mean by Erb's point? Adda note on Klumpke's paralysis.[6+3+3][2015]
7. What are the palmar spaces? Describe the thenar muscles with their nerve supply and actions.[3+9][2017]

GROUP- B (7 MARKS)

1. A man presents with neuromuscular disability following the fracture of the surgical neck of the humerus. Give a brief account of the nerve affected for its close relation to that part of the bone. From your anatomical knowledge , mention the motor and sensory defects that may arise.[5+2][2010][2015]
2. A factory worker presents with acute pain and swelling of the central part of his right hand following infection of the webbed space b/w middle and ring fingers. Use your anatomical knowledge to explain this complication. Write a brief note on the palmar space affected. [2+5][2009]
3. Following a street accident a young man develops fracture of the mid shaft of the humerus. Discuss the distribution of this nerve related to that part of the bone while it passes through the arm. Add a note to its lesion as it passes through the spiral groove of the bone.[4+3][2008]
4. Describe the shoulder joint. Justify the statement , "Shoulder joint enjoys mobility at the expense of stability".[7][2007]
5. In which direction head of humerus commonly dislocates & can stretch and injure an important nerve of upper limb?[4+2+1][2007]
6. Injury of anatomical snuff box of wrist may injure the artery which forms the deep palmar arch in hand. Describe its course; name its branches.[4+3][2006]

7. Define the long bone. Describe the different parts of young long bone. Describe the blood supply of long bone.[1+3+3] [2016]

GROUP –C (3 MARKS)

1. Anatomical snuff box of hand.[2014]
2. Cephalic vein.[2013]
3. Quadrangular and triangular space.[2012]
4. Clavipectoral fascia.[2010]
5. Carpal Tunnel Syndrome.[2009][2008]
6. Rotator Cuff.[2005]
7. Erb-Duchenne paralysis.[2004]
8. Laws of ossification.[2015]

GROUP – D (3 MARKS) EXPLAIN WHY

1. Painful arch syndrome.[2014]
2. Clavicle is a modified long bone.[2013, '09, '06]
3. Injury to the radial nerve in the cubital fossa will not cause wrist drop.[2012]
4. Injury to the long thoracic nerve causes winging of the scapula.[2012]
5. Upper end of the humerus is an example of a compound epiphysis.[2010]
6. A palpable nodule in the axilla of an elderly lady should be properly cared.[2009]
7. Metastasis of carcinoma from the inferomedial quadrant of breast may spread to the pelvic cavity.[2006]
8. In shoulder joint dislocation, the humerus generally dislocates inferiorly.[2005]
9. Fracture of the scaphoid of the wrist is often associated with avascular necrosis of the proximal segment.[2004]
10. Fracture of shaft of humerus causes wrist drop.[2017]

INFERIOR EXTREMITY

GROUP- A (12 MARKS)

1. Name the bones forming the knee joint. Describe the locking and unlocking movements of knee joint. [2+10][2014]
2. What are the muscles there after cutting the gluteus maximus? Name the nerves supplying these muscles. What are the actions of these muscles on hip joint? [3+4+5][2012]
3. Following an automobile injury a person lost the adductor movement of his leg. Describe the injured nerve under following headings: origin, branches and distribution.[3+4+5][2011]

GROUP- B(7 MARKS)

1. Describe the factors maintaining the longitudinal arches of the foot. What are the disadvantages of flat foot ? [5+2][2013]
2. A bus conductor is having prominent veins in the leg during standing position. What are the superficial veins present in the leg? What are the origin, termination, tributaries of the short saphenous vein? What is varicosity of leg veins? [2+4+1][2011]
3. A factory worker presents with swollen painful inguinal lymph nodes following an uncared wound at the medial side of ankle. Explain the complication from your anatomical knowledge. Write a brief note on inguinal lymph nodes.[2+5][2010]
4. A child suffers from bilateral congenital dislocation of hip joint. Mention the anatomical type of dislocation of the hip joint. What are the factors maintaining the stability of hip joint?[2+5][2009]
5. An athlete while running experienced severe cramp in the right thigh and was diagnosed as a case of pulled hamstrings. State the characteristics of hamstrings. Mention the origin, insertion , nerve supply and actions of these group of muscles.[3+4][2008]
6. In case of fracture dislocation around the knee joint, which artery is likely to be avulsed? Name and describe the artery along with the arteries that supply the knee joint.[4+3][2007]
7. Which joints are involved in the movements of inversion and eversion? Name the invertors and evertors of foot. What is the axis of these movements? Name the nerve supplying these muscles. Which segment of spinal cord controls the movements of the foot? [1+2+1+2+1][2006]
8. A mid-aged woman develops varicose leg veins. How superficial veins are connected to deep veins? Briefly describe the anatomical factors preventing the varicosity of leg veins.[3+4][2005]
9. A footballer sustained sprain followed by difficulty in normal movements of his left knee after he attempted to kick the ball through his right foot. He was diagnosed to have injury on the semilunar cartilages of his left knee. Explain the anatomical basis of his injury. Give a brief note on the semilunar cartilage of the knee joint. Which semilunar cartilage is susceptible to injury and why? [2+3+2][2004]

GROUP-C (3 MARKS) SHORT NOTES

1. Femoral sheath.[2013]
2. Deltoid ligament.[2011, '08]
3. Popliteus muscle.[2010, '04]
4. Ischial spine.[2009]
5. Acetabular labrum.[2007]
6. Illio-femoral ligament.[2006]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Foot drop after the fracture of the neck of the fibula.[2011, '06]
2. Peroneus longus muscle has effects on both longitudinal and transverse arches of foot.[2010, '08]
3. Injury to the superior gluteal nerve shows the positive Trendelenberg's sign.[2009]
4. Medial meniscus is susceptible to injury more frequently than the lateral meniscus.[2005]
5. Femoral hernia is more common in females than in males.[2004]

THORAX

GROUP- A(12 MARKS)

1. Describe the transverse pericardial sinus with its development. What is its clinical importance? [8+2+2][2014]
2. Give an account of pleura. Mention its nerve supply. What is the site of choice for insertion of needle to drain pleural fluid and why?[6+3+3][2013]
3. Name the arteries arising from the ascending aorta. Give the course & branches of the supply of these arteries.[2+5+5][2007]
4. What are the cardiac anomalies associated with Fallot's Tetralogy? Give a brief account of the interventricular septum. Name & number the different broncho-pulmonary segments. Mention its applied importance.[2+6+4][2005]
5. An elderly man complains of frequent chest pain on exertion & is advised to have coronary artery angiography. Give the usual pattern of coronary supply of heart. How interventricular septum is developed and what are the possible errors there of? [6+4+2][2004]
6. Pleura: types, nerve supply, reflections/recesses, applied importance.[2017]

GROUP- B (7 MARKS)

1. Give the development of atrio-ventricular septum. A pin pricked to the tight sight of the septum will reach to which pat of the heart? [5+2][2014]
2. Coronary artery supply of heart. What is coronary dominance? [6+1][2012]
3. A young patient with repeated vomiting and reflux on examination was diagnosed with diaphragmatic hernia. Explain the condition from your anatomical knowledge. Give the origin, insertion and nerve supply of diaphragm. [2+5][[2011]
4. A child with history of cough, fever & breathlessness and exertion along with cyanosis since birth, was diagnosed as a cause of Fallot's Tetralogy. Explain the disorder embryologically. Write a short note on development and blood supply of IV septum. [4+3][2008]
5. A patient with history of cough, fever and breathlessness was diagnosed to be a case of pleural effusion. Give a brief account of pleura with its recesses and nerve supply.[2010]
6. A mid-aged lady suffered from dysphagia due to oesophagus following an attempt to commit a suicide by consuming corrosive chemicals. Using your knowledge of anatomy for normal constriction of oesophagus , mention the possible site of stricture. Describe the important relations and clinical anatomy of oesophagus.[2+5][2005]
7. Patient complaining of pain during respiration and breathlessness due to accumulation of fluid in the plural sac. Name the different parts of pleura along with its nerve supply. [4+3][2004]

GROUP-C (3 MARKS) SHORT NOTES

1. Central tendon of diaphragm.[2015]
2. Bronchopulmonary segments of left lung.[2016][2004]
3. Ligamentum arteriosum.[2014]
4. Nerve supply of apical pleura.[2014]
5. Inlet of thorax.[2013]
6. 1st intercostal nerve.[2012]
7. Oblique sinus.[2007]
8. Left coronary artery.[2010]
9. Respiratory epithelium.[2009]
10. Constrictions of oesophagus.[2008][2007]
11. Costo-diaphragmatic recess of pleura.[2006]
12. Histology of oesophagus.[2006]
13. Fallot's Tetralogy.[2004]
14. Typical intercostal nerves.[2005]
15. Broncho-pulmonary segments.[2016][2004]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Central tendon of thoraco-abdominal diaphragm is bending with the basal part of fibrous pericardium.[2014]
2. Tracheo-oesophageal fistula.[2012]
3. Type of respiration in infant is abdominal, where as thoracic in adult females and and thoraco-abdominal in adult males.[2012, '09]
4. Segment 2 and 6 of lungs are sites of lung abscess.[2011]
5. Entry of foreign body is common to the right bronchus.[2011]
6. Transposition of great vessels.[2011]
7. Intercostal nerves other than 3rd to 6th are atypical.[2010]
8. Right recurrent laryngeal nerve hooks around the right subclavian artery where as the left one rounds the ligamentum arteriosum.[2008]
9. Hyaline cartilage is present in the wall of trachea and bronchus.[2006]
10. Cervical rib.[2005]

GENERAL ANATOMY, EMBRYOLOGY AND GENETICS

GROUP-B(7 MARKS)

1. Describe the development of placenta in short . What is placenta previa? [2+5][2014]
2. What is metaphysis of a growing bone. Give its importance.[2+5][2014]
3. Mention the main structural characteristics of a synovial joint. Classify synovial joint with example of each type. [3+4][2012]

GROUP-C (3 MARKS) SHORT NOTES

1. Difference b/w transitional and stratified squamous epithelium.[2014]
2. Capacitation.[2014]
3. Placental barrier.[2013]
4. Non-disjunction.[2013]
5. Epiphyseal cartilage.[2012]
6. Down's syndrome.[2011, '04]
7. Klinefelter's syndrome.[2011]
8. Plasma cell.[2010, '05]
9. Light microscope structure of lymph node.[2009]
10. Allelic gene.[2007]
11. Notochord.[2007][2016]
12. Barr body.[2006]
13. Sarcomere.[2016]
14. Karyotyping.[2016]
15. Blastocyst.[2015]
16. Turner's syndrome.[2015]
17. Laws of ossification.[2015]

GROUP-D(3 MARKS) EXPLAIN WHY

1. Osteoclast.[2014]
2. Double Barr body in Klinefelter's syndrome.[2012, '11]
3. Monozygotic twins are identical while dizygotic twins are non-identical.[2012]
4. An elderly female(38 yrs) gave birth to a baby who is examined to have a rounded face, epicanthic folds and characteristic single palmar crease (Simian Crease) on the palm. Explain the genetic cause of the event.[2011]
5. Presence of Barr body in buccal smear of male patient.[2005]
6. Annular pancreas.[2016]

NEURO-ANATOMY

GROUP-A(12 MARKS)

1. Give the arterial supply of the superolateral surface of the brain. What is macular sparing? [10+2][2014]
2. What is Argyll-Robertson's pupil? Mention the sites of lesion for this type of abnormality. With a suitable diagram, describe the features of the transverse section of the mid brain at the level of superior colliculus. Describe the pathway for light reflex.[2+1+6+3][2006]
3. What is arterial circle of Willis? Describe the arterial supply of superolateral surface of cerebral hemisphere.[5+7[2016]]
4. Enumerate the white fibres in the brain. Describe the internal capsule under the following heads: Parts with relations, fibres passing through different parts and blood supply. What is stroke?[2+3+4+2+1][2017]

GROUP-B (7 MARKS)

1. CT scan of the brain of a patient suffering from cerebro-vascular accident shows a lesion in the internal capsule of the brain. State why this part is called "Internal Capsule". Mention the different fibres passing through the internal capsule. Add a note on its blood supply. [1+3+3][2010]
2. A 60 years old person suffers from cerebellar ataxia following vascular damage. Mention the arterial supply and phylogenetic subdivision of cerebellum. What do you mean by cerebellar ataxia? [2+3+2][2009]
3. A patient with Argyll-Robertson's Pupil presents with persistence of accommodation reflex but loss of light reflex. Briefly discuss the accommodation reflex pathway. State how can you justify the specific neurological deficit in this case.[5+2][2008]
4. Enumerate the ventricles of the brain. Describe the circulation of the CSF. Add a note on the blood-brain-barrier.[1+4+2][2005]
5. An old man of 65 years gets an attack of UMN paralysis. What is the internal capsule of the brain? Mention the composition and blood supply of its parts.[5+2][2005]
6. Describe the walls and communications of 3rd ventricle. What is non-communicating type of hydrocephalous? [4+1+2][2016]
7. Describe the floor of the 4th ventricle with proper diagram.[7][2017]
8. What are the different parts of cerebellum? Mention their blood supply. What is cerebellar ataxia?[4+2+1][2015]

GROUP-C (3 MARKS) SHORT NOTES

1. Thalamic nuclei.[2011]
2. Boundaries and communications of 3rd ventricle of the brain.[2010]
3. Motor neurons of spinal cord.[2009]
4. Blood-brain-barrier.[2008]
5. Tectum of midbrain.[2005]
6. Blood supply of spinal cord.[2017]

GROUP-D(3 MARKS) EXPLAIN WHY

1. Lesion in pretectal nucleus of midbrain causes Argyll-Robertson's pupil.[2009]
2. Visual defect due to occlusion of posterior cerebral artery does not affect macular vision.[2008]
3. Optic nerve is not a peripheral nerve.[2007]
4. Patient with pituitary tumor suffers from bitemporal hemianopia.[2016]
5. Increased intra-cranial pressure may cause medial squint.[2015]
6. In anterior spinal artery syndrome there is bilateral loss of pain and temperature sensation but conscious propioceptive sensations are lost.[2015]
7. Increased pressure of CSF in subarachnoid space is easily diagnosed by opthalmoscopic examination of the eyes. [2017]

ABDOMEN

GROUP –A (12 MARKS)

1. Give a brief note on ureter. Mention its microscopic structure & development. In which clinical condition pain may extend from loin to groin involving ureter? [5+2+2+4][2013]
2. A young married lady with the history of missed period, suddenly collapsed with sharp lower abdominal pain & was diagnosed ruptured tubal pregnancy. What is the commonest site of tubal pregnancy and its fate? Mention the parts of this tube, blood supply, histological structure and development.[2+3+2+3+2][2012]
3. A 50 years old man was brought to OPD with a complaint of swelling at the midline of anterior abdominal wall over an operative scar. Swelling was diagnosed as incisional hernia through the rectus sheath. A) Give its formation at different levels. B)What are the contents of the rectus sheath? C)Define the sheath. D) Why is median incision not preferred over the anterior abdominal wall?[2+5+3+2][2011]
4. An old man suffering from carcinoma of prostate with metastasis in vertebra. From your anatomical knowledge explain this complication. Discuss briefly the capsules, lobes, and relations of the prostate gland. Add a note on the interior of the organ.[2+6+4][2010]
5. Prevaginal examination of an elderly lady suffering from pelvic inflammatory disease reveals collection of fluid in the pouch of Douglas. Write a note on this pouch and peritoneal as well as visceral relation of the uterus. Give a brief account of the supports to this organ. [3+4+5][2010]
6. A child presents leakage of urine through umbilicus from urinary bladder. Using your anatomical knowledge explain the congenital anomaly with a note on development of urinary bladder. Give a brief account of the features with relations , ligaments, and nerve supply of the organ. [3+9][2009]
7. A young lady was brought to the emergency with acute lower abdominal pain & features of shock diagnosed as a case of ruptured ectopic gestation. Mention the usual site of ectopic gestation. Discuss the gross anatomy , development and microscopic anatomy of the organ involved.[2+10][2009]
8. What are the parts of fallopian tube and where does fertilization usually occur? Give blood supply, histological structure and development of the same.[2+3+4+3][2004]
9. During routine investigation, USG of whole abdomen of an adult revealed horseshoe shaped kidney. Explain the case with your embryological point of view. Discuss briefly the development of kidney. Add a note on its clinical anatomy with congenital anomalies.[2+5+5][2008]
10. An anxious lady complains that the right scrotal sac of her new born male baby is empty. The case is diagnosed as one of the cases of congenital anomalies of descending testes. Discuss various anomalies of descent of testes. Explain how female gonad is different from male.[5+5+2][2008]
11. A hollow muscular pelvic organ when full and distended strip off peritoneum behind the supra pubic part of the anterior abdominal wall. Give an account of anatomical parts , surfaces and ligaments of the organ. Describe the interior features of the base of the organ. How the organ does develop?[6+3+3][2006]

12. A fatty lady of 45 years with prolonged history of hyperacidity and dysphagia was brought to hospital with acute pain in epigastrium and in right shoulder. She was finally diagnosed as a case of Cholelithiasis (gall stone). Using your anatomical knowledge can you explain the pain in both epigastrium and right shoulder and the peripheral pain pathway? Give a brief anatomy and clinical importance of gall bladder. [4+4+4][2005]
13. Describe the formation of rectus sheath. Name the contents of the sheath. What is the function of tendinous insertions and at which level they are present? [6+3+1+2][2016]
14. Describe the shutter mechanism of inguinal canal and anatomical difference b/w oblique and direct hernia.[6+6][[2015]
15. Describe the internal features of anal canal with epithelial lining of each division. Why the pectinate line is called watershed line of anal canal? What is the importance of Hilton's line? Mention the development of anal canal. Define internal haemarrhoids and mention their common sites.[4+2+2+2+2][2017]

GROUP-B (7 MARKS) SHORT NOTES

1. Describe the common bile duct in short. What is the importance of Calot's triangle?[5+2][2014][2016]
2. What are the anatomical factors that prevent the gastro-esophageal regurgitation. Give an account of histological structures of oesophagous.[4+3][2013]
3. Give an account of uterine cervix. Mention its lymphatic drainage.[4+3][2013]
4. Describe the histology of classical hepatic lobule. What is liver acinus?[5+2][2012]
5. Why is ischio-rectal abscess very painful when abscess is superficial. Write boundaries and contents of the fossa.[1+4+2][2012]
6. Name the false ligaments of the liver. State within which mesogastrium development of liver takes place and what are the remnants of it. Write from which part of gut, liver bud develops? [4+1+1+1][2011]
7. Name the parts of the large intestine with their corresponding length in adults. Describe the structures of large gut with diagrams.[2.5+4.5][2011]
8. A teenaged girl suffering from acute appendicitis got an initial attack of pain around umbilicus, which was finally localized in right iliac fossa. State anatomical reasons of pain in the both areas. Give an account of positions of vermiform appendix.[3+4][2010]
9. After spleenectomy operation following an intra-abdominal injury, a patient develops diabetes mellitus. Explain the reason from your anatomical knowledge. Discuss briefly the ligaments of spleen cut during operation.[2+5][2009]
10. Bouts of hematemesis following cirrhosis of liver of a patient were diagnosed to be due to obstruction of portal venous system. Explain it. Give a brief account of portal vein with a note on porta-caval anastomosis.[2+5][2008]
11. What is spermatic cord? Name its contents. Describe the duct which conveys male germ cells for ejaculation.[1+2+4][2007]
12. In case of intestinal obstruction, caecum is found to be distended. In which part of the gut does the obstruction lie? Give an account of the caecal blood supply. Describe the illio-ceacal valve.[1+3+3][2006]

13. A middle aged woman complains of frequent heart burn about an hour after meals. Provisional diagnosis was made to be as a case of reflux oesophagitis. What are the factors that prevents gastro-esophageal regurgitation? Give relations and arterial supply of abdominal part of esophagus.[3+2+2][2004]
14. A patient was diagnosed to have polycystic kidney. Give the embryological basis of this condition. Illustrate your answer with diagrams.[5+2][2004]
15. Describe the inferior of anal canal along with its histological structure. [4+3][2015]
16. Describe the cervix uteri. What is its clinical importance? [5+2][2016]
17. Describe the lymphatic drainage of stomach. Why does Virchow's lymph nodes get enlarged in carcinoma of stomach?[5+2][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Ovarian fossa on lateral pelvic wall.[2013, '07]
2. Epiploic foramen.[2012, '11]
3. Umbilical cord.[2012]
4. Left renal vein.[2011]
5. Inter-vertebral disc.[2010, '08]
6. Physiological umbilical hernia.[2010]
7. Porto caval anastomosis.[2009]
8. Placenta previa.[2008]
9. Relations of head of pancreas.[2008]
10. Pelvic mesocolon.[2007]
11. Hasselbach's triangle.[2009]
12. The bare area of liver.[2007]
13. Mackenrodt's ligament.[2012]
14. The mesentery.[2006]
15. Renal fascia.[2006]
16. Intervillous space of placenta.[2006]
17. Histology of adrenal cortex.[2006]
18. Neural crest.[2005]
19. Ischio-rectal space.[2005]
20. Openings of diaphragm.[2005]
21. Hepato-renal pouch of Morission.[2004]
22. Coeliac trunk.[2004]
23. Lesser sac.
24. Broad ligament.
25. Ligaments of uterus.
26. Interior of caecum.
27. Space of Retzius.
28. Interior of 2nd part of duodenum.
29. Supports of uterus.
30. Ligaments of urinary bladder.
31. Meckel's diverticulum.

32. Perineal body.
33. Duodenal cap.
34. Ligaments of Treitz.
35. Inguinal canal.
36. Internal trigone of urinary bladder.[2014]
37. Broad ligament of uterus.[2014]
38. Prostatic part of male urethra.[2015]

GROUP-D (3 MARKS) EXPLAIN ANATOMICALLY

1. Varicocele of testis is common.[2014]
2. Carcinoma of head of pancreas may produce jaundice.[2014]
3. A new born baby presenting with imperforate anus.[2013, '05]
4. Pain of appendicitis is referred to umbilicus.[2013, '04]
5. Cholecystitis causes pain in right shoulder.[2011]
6. Urinary fistula at the level of umbilicus in a new born baby.[2011]
7. A patient is detected to have horse-shoe shaped kidney.[2010]
8. A patient of cirrhosis of liver presents with "Caput Medusa".[2010]
9. Pectinate line is an important landmark of anal canal.[2009]
10. Rupture of membranous part of urethra may cause extravasation of urine in anterior abdominal wall.[2008, '05]
11. Incidence of inguinal hernia in normally healthy individual is prevented by shutter mechanism.[2008]
12. Peritoneal infection from exterior is common in females.[2007]
13. Varicosity of pampiniform plexus of vein is more common in left side.[2007]
14. Non-appearance of ureteric bud on one side leads to agenesis of kidney on the same side.[2007]
15. The vermiform appendix can be regarded as tonsil of abdomen.[2007]
16. During the resction of diseasd caecum, the ascending colon, the surgeon usually removes the terminal 8-10 cm of ileum also.[2006]
17. Pain of ureteric colic radiating in the medial side of the thigh.[2005]
18. An old man suffering from carcinoma of prostate develops vertebral metastasis.[2004]
19. Appendix of testes is embryologically different from appendix of epididymis.[2017]
20. Pleural sac may be accidentally opened during exposure of kidney from back.[2017]
21. New born baby passes urine through umbilicus.[2016]
22. Pubic tubercle is important landmark for femoral and inguinal hernia.[2016]
23. In prostatic carcinoma, X-ray of lumbosacral vertebrae to be advised.[2016]
24. Dropping of the kidney is not followed by suprarenal gland.[2016]
25. Caput medusa. [2015]
26. Inner layer of myometrium acts as a living ligature of uterus during menstruation & parturition.[2015]

HEAD AND NECK

GROUP-A(12 MARKS)

1. A man suffering from hypertension, bleed from Little's area of nose. Give an account on the formation, arterial supply, nerve supply, and lining epithelium of the nasal septum with a note on Little's area.[4+2+2+2+2][2012]
2. Following throidectomy, a patient may develop hoarsness of voice. Explain the statement. Give a brief account of intrinsic muscles of larynx and their action on Rima glottides.[2+10][2012]
3. A child came to the OPD with a complaint of injury to the external ear. On examination, a perforation was found in the tympanic membrane. Discuss the gross anatomy, arterial supply, and nerve supply of tympanic membrane & external auditory canal.[3+1+2+3+1+2][2011]
4. A person with history of inability to close his mouth immediately after yawning. What is the anatomical basis of it? Describe the muscles and ligaments related to the anatomical site affected.[2+5+5][2011]
5. Following an operation of right parotid gland, a patient develops weakness of facial muscles of that side. State the relations of the affected cranial nerve with respect to the parotid gland. Give a brief account of the functional components, intra cranial course and distributions of the nerve. [2+10][2010]
6. A patient is brought to the physician presenting right sided ocular signs of ptosis, strabismus, diplopia and a loss of accommodations as well as the light reflex with the contralateral hemiplagia. From your anatomical knowledge, explain the lesion. Give a brief account of the cranial nerve affected.[2+10][2010]
7. A new born baby was found to have cleft palate with nasal regurgitation of milk during breast feeding. Explain the congenital defect from your anatomical knowledge with a brief note on development of soft palate. Give a brief account on muscles of soft palate with its movements during deglutition. [4+8][2009]
8. Following stroke, a man suffers from Weber's Syndrome, with left sided hemiplagia and ptosis along with lateral strabismus and dilation of pupil of right eye. Using your anatomical knowledge explain Weber's Syndrome & involvement of ocular muscles. Discuss briefly the extrinsic muscles of the eyeball.[4+8][2009]
9. Following operation of thyroid gland, a patient develops hoarseness of voice. Give a brief note on muscles acting on vocal cord and state from your anatomical knowledge what happened wrong with the patient. Discuss the important relations and arterial supply & venous drainage of thyroid gland. Mention what precautions are to be taken by surgeon during operation of thyroid gland based on your anatomical knowledge. [4+6+2][2008, '05]
10. A patient suffering from parotid tumor , with malignant change gets complications of Bell's paralysis.Mention the anatomical changes that occurred in Bell's paralysis in this case. Discuss briefly the important relations, structures passing through the inferior part and the nerve supply of the parotid gland. [4+8][2008]

11. Give a brief account of vertebral artery. What contributions it makes to complete the circle of Willis?[12][2007]

12. A child aged about 10 yrs suffers from mid-ear infection following recurrent attacks of cough & common cold. From your anatomical knowledge answer its reasons and the route of its further infection. Mention the position of the nuclei with the functional components of the cranial nerves related to the walls of middle ear. Discuss briefly the intra petrous part of the nerve. [4+4+4][2004]

13. Describe cavernous sinus under the following headings:
A)General informations; B) Structures passing through the sinus; C) Tributaries; D) Communications.[2017][3+3+3+3]

GROUP-B (7 MARKS)

1. Name the paranasal air sinuses. Mention the factors which help to drain out the content of the maxillary air sinus. Why theses sinuses are developed around the nose.[2+3+2][2014]

2. Mention the muscles of pharynx. Give their nerve supply. What is Killian's dehiscence? [3+2+2][2014]

3. Enumerate the paired venous sinuses in skull. Right brief note on cavernous sinus. [3+4][2013]

4. Fish bone badly stuck in pyriform fossa of pharynx was removed with prolonged effort causing laceration of tissue. Give boundaries of pyriform fossa, its sensory nerve supply and possible deleterious effects of tissue damage.[2+2+2][2013][2004]

5. Write a note on internal capsule of brain with its blood supply. What is hemiplagia? [5+2][2012]

6. Describe the development of tongue. Correlate the nerve supply of tongue with its development.[4+3] [2012]

7. An old man presents an ulcer along the margin of tongue which was diagnosed as carcinoma of the tongue. Which groups of lymph nodes are likely to be enlarged? Discuss briefly the lymphatic drainage of tongue.[2+5][2011]

8. A patient with increased intracranial tension presents with medial squint/ strabismus. Explain the reason for medial squint. Give a brief account of the anatomy of the structures involved.[2+5][2011]

9. During surgical operation of thyroid gland, a surgeon must be careful to avoid injury to some nerves. Mention the components, distribution and effect of lesions of these nerves.[2+3+2][2010]

10. A boy presents discharge of pus through ear following recurrent infection of throat. Explain the clinical complications. Write a brief note on the structures connecting ear with throat.[2+5][2009]

11. Neglected infection in dangerous area of face of a patient led to cavernous sinus thrombosis . State the reason. Mention the communications and anatomical basic of complications arising fro+m the structures related to the thrombosed sinus. [2+5][2008]

12. Mention the coats of eyeball . How the aquous humor is formed, circulated and drained? Name the refractive meium in the eye.[3+2+2][2007]

13. What is Rima Glottidis? Name the boundaries and muscles controlling the shape of Rima Glottidis under different physiological & functional conditions.[2+3+3][2007]

14. Name the different layers of deep cervical fascia. Trace any two layers vertically upwards and downwards. Which layer encloses the thyroid gland and explain why thyroid moves with deglutition?[2+3+3][2007]
15. Explain the presence of thyroid glandular follicles in tongue. Describe the dorsum of the tongue. Give its sensory nerve supply. [2+3+2][2006]
16. What are the manifestations of occulomotor nerve lesion. Describe the course of the nerve in the middle cranial fossa & orbit. Explain the cause of lateral squint and dilated pupil in occulomotor nerve palsy. [2+3+2][2006]
17. Acute maxillary sinusitis can cause toothache . Enumerate the paranasal air sinuses with their respective sensory innervations. Explain the cause of toothache. [5+2][2006]
18. An one month old baby was brought to OPD for constant watering of one eye. Explain the anatomical cause and enumerate the structures forming the lacrimal apperatus. Trace the secretomotor pathway to lacrimal gland.[1+3+3][2005]
19. Enumerate the extra-occular musces with their nerve supply and functions.[4+3][2017]

GROUP-C(3 MARKS) SHORT NOTES

1. Branchial cyst. [2013]
2. Otic ganglion.[2013]
3. Temporo-mandibular joint.[2013]
4. Danger area of face.[2013][2015-Explain Why]
5. Ciliary ganglion.[2012]
6. Lacrimal aperatus.[2012]
7. Tymanic membrane.[2012]
8. Ansa cervicalis.[2012]
9. Inlet of larynx.[2011,'06,'05]
10. Development of soft palate[2011]
11. Spine of sphenoid.[2011]
12. Thyroglossal duct.[2010]
13. Middle meatus of nose.[2010,'08]
14. Circulation of aquous humor.[2010]
15. Cricoid cartilage[2009]
16. Superior cervical ganglion.[2009]
17. Iris.[2008]
18. Inferior Constrictor muscle.[2008]
19. Histology of palatine tonsil.[2007]
20. Temporalis muscle.[2007]
21. Movement of temporo-mandibular joint.[2004]
22. Sternocleidomastoid muscle.[2005]
23. Lacrimal gland[2005]
24. Ciliary body.[2004][2016]
25. Pyriform fossa with clinical importance.[2014]
26. Muscles of the first branchial arch with their nerve supply.[2014][2017]
27. Dangerous area of scalp.[2014][2016]
28. Styloid aperatus. [2014]
29. Spinal accessory nerve.[2017]

30. Blood supply of spinal cord.[2017]
31. Transposition of great vessels.[2015]
32. Speech area of brain.[2015]
33. Structure and nerve supply of tympanic membrane.[2015]
34. Rima Glottidis.[2016]
35. Nasolacrimal duct.[2016]

GROUP-D(3 MARKS) EXPLAIN WHY

1. Pain is referred to the middle ear in ulcer of posterior part of the tongue.[2014]
2. A patient having fracture of sphenoidal spine complains of loss of taste sensation at a later date.[2014]
3. Inflammation of parotid gland is very painful.[2014]
4. In tonsillitis, pain is referred to the middle ear.[2013][2007][2015]
5. Superior parathyroids are inferior in position[2013,'11]
6. Optic disc in eye-ball is known as blind spot.[2013, '06]
7. Postero-inferior part of tympanic membrane is chosen for myringotomy.[2013]
8. Macular vision is generally spared in lesion of posterior cerebral artery.[2012]
9. Optic nerve can not regenerate after injury.[2012]
10. A patient of pituitary tumor suffers from bitemporal hemianopia.[2014,'10][2016]
11. Layer of loose connective tissue of skull is known area of scalp.[2010,'08]
12. Repeated throat infection , if neglected, may cause mastoitidis.[2010,'08]
13. Supranuclear type of facial nerve lesion leads to motor loss of lower part of face.[2009]
14. Vocal cord is considered as water shed line of larynx.[2009]
15. Right recurrent laryngeal nerve hooks around right subclavian artey while the left one rounds the ligamentum arteiosum.[2008][2016]
16. Thyroglossal duct when present, extends above upto foramen caecum of tongue.[2007]
17. Types of articulation found with occipital bone.[2007]
18. Horner's Syndrome.[2006]
19. Branchial Cyst.[2005]
20. Corneal reflex.[2005]
21. Cavernous sinus thrombosis following infection of face.[2004]
22. Following operation of thyroid gland, patient develops hoarseness of voice.[2004]
23. Surgeon thoroughly clear the blood clots from the tonsillar fossa after tonsillectomy operation.[2004]
24. Parotiditis is very painful.[2017]
25. Syringing of external ear may sometime cause vaso-vagal attack of the patient.[2016]
26. Obliquity and length of the spinal nerve roots increase progressively from above downwards.[2016]
27. Increased intra-cranial pressure may cause medial squint.[2015]
28. In anterior spinal artery syndrome there is bilateral loss of pain and temperature sensation but conscious propioceptive sensations are preserved.[2015]
29. Posterior crico-arytenoid muscle acts as safety muscle of larynx.[2015]

10 YEAR'S QUESTION PAPER FOR 1ST PROF MBBS EXAMINATION- BIOCHEMISTRY

CARBOHYDRATE CHEMISTRY- DIGESTION & ABSORPTION

GROUP-B (7 MARKS)

1. Indicate in details the chemical composition of glycosaminoglycans and proteoglycans. Name the carbohydrates present in glycoproteins and glycolipids.[5+2][2013][2015]
2. Describe the bonds present in glycosaminoglycans. Indicate the chemical difference b/w the proteoglycans & glycoproteins. [3+4][2006]
3. Define stereoisomerism. Describe different types of stereoisomerism of glucose.[1+6][2005]
4. Describe the various forms of isomerism exhibited by carbohydrates. Name the carbohydrates present in glycoproteins. [5+2][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Blood group antigens. [2010][2016]
2. Proteoglycans. [2009]
3. Glycosaminoglycans. [2004]
4. Glycemic index of carbohydrates.[2017]
5. Invert sugar.[2017]
6. Glucose transporters.[2017]

GROUP-D(3 MARKS) EXPLAIN WHY

1. Glucose and fructose form similar osazone crystals. [2011]
2. Sucrose has no anomers.[2006]
3. Sucrose is a non-reducing sugar.[2005]
4. Defective lactose digestion may lead to a clinical condition.[2015]

CARBOHYDRATE METABOLISM

GROUP-A(12 MARKS)

1. Describe in a flow diagram the metabolic pathways of glycogen formation and degradation in the body. Describe in separate charts how cyclic AMP regulates this process by enzyme modification.[4+8][2013]
2. In a flow diagram , describe the metabolic steps of glycogenesis and glycogenolysis in muscle and show how cAMP integrates their regulation.[6+6][2010]
3. Describe the metabolic steps of citric acid cycle in a flow diagram indicating the enzymes and co-enzymes involved and highlighting the steps where the energy is produced. Mention the steps in the cycle which are irreversible in nature. Indicate how propionate is converted to one of the intermediates of this cycle.[8+2+2][2013]
4. With a suitable flow chart , describe the TCA cycle. Justify TCA cycle as the final common metabolic pathway.[7+5][2005]
5. In a flow diagram , indicate the metabolic steps by which propionate can be converted to glucose and show how key enzymes of gluconeogenesis are controlled.[6+6][2010]
6. How fructose and galactose are metabolized in the body? Mention the inherited disorders related with their metabolism.[8+4][2006]
7. On complete oxidation, glucose leads to production of carbon dioxide and water. Mention those metabolic steps where carbon dioxides are evolved. Give a detailed account of enzymes, co-enzymes and control mechanisms involved in these steps. Mention three examples of metabolic reactions where carbon dioxide is utilized in this process.[6+3+3][2016]

GROUP-B (7 MARKS)

1. Give a brief account of glycogen storage disease.[7][2014]
2. Describe in details how pyruvate is converted to Acetyl-CoA in the body.[7][2013]
3. Describe multi-enzyme complex and various reactions involved in the oxidation of pyruvic acid to acetyl-CoA. [7][2011]
4. Describe the HMP shunt pathway in a flow diagram.[7][2007]
5. Explain with a flow diagram how glycolysis and gluconeogenesis in the liver are controlled by fructose 2,6 bisphosphate & the bifunctional enzyme 6-phosphofructo-2-kinase.[7][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Rapoport Leubering cycle. [2011][2017]
2. Essential pentosuria.[2010][2016]
3. Glycogen Storage disease. [2009]
4. Role of vitamins in TCA cycle[2009]
5. Metabolic role of Glucuronic acid.[2008]
6. Regulation of pyruvate dehydrogenase complex. [2007]
7. Key glycolytic enzymes. [2006]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Phosphofructokinase I is known as pacemaker of glycolysis.[2012]
2. Von-Gierke's disease is associated with hyperuricemia.[2012][2017]
3. Impairment of pentose phosphate pathway (PPP) leads to erythrocytic hemolysis.[2011]
4. G6PD deficiency leads to hemolytic anemia.[2009,'07]
5. Sodium fluoride is added to blood samples drawn for blood sugar estimation.[2008]
6. Long chain fatty acids can not be converted to glucose in human body though the reverse is possible.[2010]
7. Fat can be synthesized from glucose but glucose can't be synthesized from fat.[2005][2016]
8. Fructose leads to formation of more VLDL.[2008]
9. Galactosemic patients are often associated with congenital cataract.[2016]

LIPID CHEMISTRY- DIGESTION & ABSORPTION

GROUP – A (12 MARKS)

1. Classify phospholipids with examples. Mention their specific role in maintaining the fluidity of plasma membrane.[10+2][2013]
2. Classify different phospholipids of physiological importance with their functions.[8+4][2004]

GROUP-B (7 MARKS)

1. Tabulate a detailed account of chemical composition of plasma lipoproteins. [7][2010]
2. Describe amphiphatic lipids with examples. Describe their behavior in aquous medium. State the importance of liposomes in clinical practice.[2+3+2][2009]
3. Classify phospholipids. Indicate their specific role in maintaining plasma membrane fluidity.[3+4][2007]
4. Classify the fatty acids in details & indicate their physical properties.[5+2][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Separation and identification of lipids by thin layer chromatography. [2013]
2. Eicosanoids.[2008]
3. Sphingolipids.[2008]
4. Gangliosides.[2006]
5. Omega-3 fatty acids.[2015]
6. Glycosphingolipids[2017]

GROUP- D (3 MARKS) EXPLAIN WHY

1. Lecithin is amphipathic as well as amphoteric in nature.[2014]
2. Arachidonic acid may not be considered as an essential fatty acid.[2010]
3. Intake of fish oils are beneficial for cardiac patients in contrast to animal fat.[2009]
4. Acid number helps in the identification of rancidity in fats and oils.[2016]

LIPID METABOLISM

GROUP-A (12 MARKS)

1. Give an account of fatty acid synthase complex. Describe the metabolic pathway for de-novo synthesis of palmitate in the body.[3+9][2014]
2. Describe the metabolic steps of biosynthesis of cholesterol. Discuss the control metabolism associated with HMG CoA reductase. Explain reverse cholesterol transport.[8+2+2][2017]

GROUP-B(7 MARKS)

1. Give the exact chemical composition of very low density lipoprotein. Explain their formation and fate inside the body.[2+5][2013]
2. Describe how ketone bodies are formed & subsequently degraded in the body.[3+4][2015]

GROUP-C (3 MARK) SHORT NOTES

1. Control of HMG-CoA reductase.[2013]
2. Role of carnitine in fatty acid metabolism.[2015]
3. Fatty acid synthase complex. [2017]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Both uncontrolled diabetes mellitus and prolonged fasting produce ketosis but its magnitude is less in the case of prolonged fasting.[2014]
2. Citric acid cycle operating in the mitochondria can take part in the extra mitochondrial fatty acid synthesis.[2004]
3. Ketone bodies are degraded in the extrahepatic tissues only.[2013]
4. HDL is involved in reverse cholesterol transport.[2015]
5. Lipoprotein lipase deficiency may lead to hyperglyceridemia.[2015]
6. Citrate plays an important role in fatty acid synthesis.[2017]

AMINO ACID , PROTIEN CHEMISTRY, DIGESTION AND ABSORPTION & TISSUE PROTEINS AND PROTEIN PURIFICATION

GROUP-A (12 MARKS)

1. Describe the salient features of alpha helix and beta pleated sheet structure of proteins. Mention the non-covalent interactions which stabilize protein confirmation. Briefly discuss the role of peripheral & integral proteins in the network of plasma proteins.[4+3+5][2014]
2. Compare and explain the oxygen binding curves of hemoglobin and myoglobin. Indicate the conformational changes that occur in hemoglobin on oxygenation. Mention the basic variations in the chemical structures of HbS and HbM as compared to the adult hemoglobin.[6+3+3][2014][2016]
3. Describe how the amino acid composition, N-terminal & C-terminal residues of a protein are determined & identified. Describe the bonds responsible for the four structures of proteins . Briefly indicate how a molecular weight of a protein is determined.[7+3+2][2013]
4. Describe the peptide bond. What are the different forces that stabilize the protein structure at the different levels of organization ? Give an example to explain the primary structure that determines the functional state of proteins.[4+5+3][2011]
5. Discuss the four orders of protein structures. Describe the alpha helical form of a globular protein. State briefly how the amino acid sequence in a polypeptide chain can be determined.[6+2+4][2010]
6. Discuss briefly how the chemical structures of myoglobin and hemoglobin influence their biological activities. Describe the changes that take place in hemoglobin on oxygenation. [6+6][2010]
7. Describe in detail how the number, kind and sequence of amino acids in a polypeptide chain are determined. [4+4+4]
8. Using hemoglobin and myoglobin as models , justify the statement, “Chemical structure of a protein decides its biochemical functions”. [12][2007]

GROUP-B(7 MARKS)

1. Describe the principles of electrophoresis. Illustrate with diagram the electrophoretic separation of the serum proteins indicating the significance of each separated band. Explain the importance of acute phase reactants. [3+2+2][2014]
2. Describe the mechanism of absorption of amino acids from the gut. What is Hartnup’s disease?[5+2][2009]
3. Describe the primary, secondary and tertiary structures of the proteins mentioning the forces that stabilize them.[7][2008]
4. Describe the chemical structure of collagen and the chemical reason for its toughness. [5+2][2007]

5. Describe briefly the chemical structures of hemoglobin. Compare the chemical structures of hemoglobin and myoglobin. Explain how oxyhemoglobin and deoxyhemoglobin act as buffers in the maintenance of acid base balance in our body.[2+1+4][2006]
6. Give an outline of procedure for determination of primary structure of a protein having single polypeptide chain. [7] [2005]
7. Name the different immunoglobulins. Give the structure and functions of IgG. [2+5][2004]
8. Classify L-amino acids present in the proteins. Explain how amino acids are separated and identified from a mixture of amino acids . [2+5][2015]

GROUP-C (3 MARKS) SHORT NOTES

1. Glycosylated Hemoglobin.[2011]
2. Prions.[2011]
3. Protein folding.[2007][2015]
4. Bonds maintaining the tertiary structure of protein. [2006]
5. 2,3 BPG on Hb-Oxygen interaction.[2004]
6. Selenocystine. [2015]
7. Electrophoresis. [2016]
8. Beta pleated sheet. [2017]

GROUP –D (3 MARKS) EXPLAIN WHY

1. Patient with Hb-S often suffers from anemia.[2013][2017]
2. Collagen has quarter staggered triple helical structure.[2012]
3. Glycine solution can not rotate the plane of plain polarized light.[2012]
4. 2,3 BPG helps in delivery of Oxygen to the tissues.[2011]
5. 2,3 BPG helps in decreasing the affinity of hemoglobin towards oxygen. [2007]
6. Both protein and urea give positive biuret test. [2005]
7. Chaperons play a very significant role in protein folding.[2016]
8. Hb-A1c provides valuable information for management of diabetes mellitus.[2016]
9. Myoglobin does not exhibit Bohr effect.[2015]

AMINO ACID AND PROTEIN METABOLISM

GROUP-A (12 MARKS)

1. Describe how catabolism of haem produces bilirubin. Indicate in details the process of uptake, conjugation and secretion involved in transfer of bilirubin from blood to bile.[6+6][2014]
2. Describe the formation and degradation of epinephrine in the body. [7+5][2007]

GROUP-B (7 MARKS)

1. Describe the process of transamination and oxidative deamination in the body.[4+3][2014]
2. Write the synthesis, transport and degradation of catecholamines.[7][2011]
3. Describe how catecholamines are synthesized and degraded inside the human body.[3+4][2010]
4. What are the metabolic products of tyrosine? Describe with suitable flow chart the biosynthesis of catecholamines.[2+5][2008]
5. Describe the formation and fate of ammonia inside the body.[2+5][2009]/[3+4][2006]
6. Give the reaction intermediates and bioenergetics of urea cycle .[3+3+1][2004]
7. Write down with flow chart the steps of catabolism of carbon skeleton phenylalanine & mention the steps which are blocked in phenylketonuria and alkaptonuria.[5+2][2005]

GROUP- C (3 MARKS) SHORT NOTES

1. Acute intermittent porphyria.[2014]
2. S-Adenosyl Methionine.[2013]
3. Maple Syrup Urine Disease. [2010]
4. Polyamines. [2010]
5. Phenylketonuria.[2004]

GROUP- D(3MARKS) EXPLAIN WHY

1. Patient with carcinoid syndrome may exhibit pellagra.[2013]
2. Alkaptonuria is often associated with generalized pigmentation of connective tissue (Ochronosis). [2013]
3. Ammonia is toxic to Central Nervous System. [2012]
4. Phototherapy (exposure to blue light) helps in treatment of neonatal physiological jaundice.[2011]
5. Urine turns black on standing in Alkaptonuria.[2010]
6. Urinary urobilinogen is increased in hemolytic jaundice . [2009]
7. Proteinuria. [2004]

CHEMISTRY OF NUCLEOTIDES AND NUCLEIC ACIDS

GROUP- B (7 MARKS)

1. With the help of a diagram describe the chemical structure of a tRNA and mention the function of its different arms.[3+4][2007]
2. Give the structure of a deoxyribonucleotide. Write down with the help of a diagram and mention its different functions. [2+5][2005]

GROUP- C (3 MARKS)

1. t-RNA.[2011]
2. Synthetic nucleotide analogues. [2009]
3. Pseudo nucleotides. [2007]
4. Structural features of A, B and Z-DNA.[2007]
5. Bonds in polynucleotides.[2017]

GROUP-D (3 MARKS) EXPLAIN WHY

1. DNA with higher GC content have relatively higher Tm.[2014]
2. RNA is alkali labile while DNA is alkali resistant.[2012]
3. DNA can occur in different 3D models.[2004]
4. Synthetic nucleotides are used as drugs.[2015]
5. DNA is more stable than RNA.[2016]
6. Adenine nucleotides have various functions beside making nucleic acids. [2017]

NUCLEOTIDE METABOLISM

GROUP-B (7 MARKS)

1. Name the endpoint of purine catabolism and process of breakdown of purine. [2+5][2008]
2. Indicate the source of nitrogen and carbon atoms of the purine ring in a diagram. Describe how purines are catabolised.[7][2006]

GROUP-C (3 MARKS) SHORT NOTES

1. Gout.[2013]
2. Source of nitrogen and carbon atoms of the purine ring.[2013]
3. Purine salvage pathway. [2005]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Dietary purines are not essential.[2008]
2. Intake of alcohol may aggravate the symptoms of gout.[2016]
3. Synthetic nucleotides are used as drugs.[2015]

BIOLOGICAL OXIDATION

GROUP – A (12 MARKS)

1. Explain oxidative level & substrate level phosphorylation. Give two examples of substrate level phosphorylation. Explain the mitochondrial electron transport chain.[2+2+8][2008]
2. Describe with diagram the respiratory chain complexes that span the inner mitochondrial membrane indicating the specific sites of energy production. What are its mobile components? Mention the role of inhibitors of respiratory chain. What purpose is served by their use in vitro. What happens when complex I is deficient? [5+2+5+1][2006]

GROUP-B (7 MARKS)

1. Describe the operation and significance of glycerophosphate shuttle and malate shuttle.[3+4][2014]
2. What is oxidative phosphorylation? Differentiate it from substrate level phosphorylation. Illustrate with a diagram how ATP is synthesized in mitochondria?[2+2+3][2014]
3. Describe the mitochondrial electron transport chain. How the inhibitors of ETC differ from uncouplers of oxidative phosphrylation?[5+2][2011]
4. Describe the chemiosmotic coupling hypothesis of oxidative phosphorylation. [7][2010]

GROUP-C (3 MARKS) SHORT NOTES

1. Uncouplers.[2004]
2. Malate shuttle.[2005]

GROUP-D(3 MARKS) EXPLAIN WHY

1. G6PD is responsible for erythrocyte membrane rigidity. [2014]
2. Brown adipose tissue promotes thermogenesis. [2011, '10]

CLINICAL FUNCTION TEST, MEMBRANE TRANSPORT AND ENZYMES

GROUP-A (12 MARKS)

1. Explain the Michaelis Menten equation and explain the role of substrate concentration on the rate of enzyme catalyzed reaction with the help of graphs. Illustrate how Vmax and Km are affected by competitive and non competitive inhibition of enzymes. " The Km value for glucokinase is

much higher than that for hexokinase though both act on glucose"- explain the statement.[6+4+2][2017][2013]

2. Name 5 enzymes whose catalytic activities are altered by covalent phosphorylation-dephosphorylation and indicate their functions. According to International Union of Biochemists, enzymes are classified into six major groups. Indicate in which groups the following enzymes belong:
   A) Adenylate cyclase,
   B) DNA dependant RNA polymerase.
   C) Aldolase,
   D) Chymotrypsin,
   E) Reverse Transcriptase,
   F) Enolase
   G) Acetyl CoA carboxylase. [5+7][2017][2015]

GROUP-B(7 MARKS)

1. Describe the renal mechanism for regulation of acid base balance. What is the biomedical importance of anion gap?[4+3][2014]
2. Define jaundice. With the help of liver function test and urine test, show it can be differentiated b/w hepatocellular and obstructive jaundice. [2+5][2008]
3. Explain the mechanism of allosteric regulation of enzyme activity using PFK as an example. Mention the other mechanisms by which the enzyme action is regulated.[4+3][2016]
4. Describe the methods of determining the chemical structure of any unknown biomolecule.[7][2017]

GROUP- C (3 MARKS) SHORT NOTES

1. Receptor mediated endocytosis.[2014]
2. Ionophores.[2014]
3. Respiratory acidosis. [2013]
4. Non functional plasma enzymes.[2016]

GROUP-D(3 MARKS) EXPLAIN WHY

1. Renal clearance study is an early predictor of impending renal failure.[2014]
2. Isoenzymes of Alkaline Phosphatase are of diagnostic significance.[2014]
3. Non function plasma enzymes are important only for clinical purposes.[2014]
4. Levels of hepatic enzymes can differentiate b/w hemolytic, hepatocellular and obstructive jaundice.[2013]
5. Colloids are biologically important having clinical significance.[2013]
6. The mode of action of metallo-enzymes and metal activated enzymes are different.[2013]
7. The concentration of creatinine in blood predicts renal function of an individual.[2008]
8. Isoenzyme assay is helpful in the diagnosis of MI.[2015]

FREE RADICALS AND ANTIOXIDANTS

GROUP-B(7 MARKS)

1. What are free radicals? How do they damage the biological systems? Name the various antioxidants protecting the organisms. [1+3+3][2009]
2. Describe the reactions catalyzed by the enzyme superoxide-dismutase. Describe the Cyt-P450 dependant microsomal hydroxylation reaction. Mention two examples of hydroxylation reactions where ascorbic acid is involved.[1+5+1][2006]

GROUP- C (3 MARKS) SHORT NOTES

1. Biochemical functions of peroxisomes.[2014]
2. Antioxidant enzymes. [2014]
3. Role of Cyt-P450 in hydroxylation reaction.[2013]
4. Super-oxide dismutase.[2013]
5. Glutathion.[2008]

GROUP-D(3 MARKS) EXPLAIN WHY

1. Superoxide dismutase protects aerobic organisms against oxygen toxicity.[2008]
2. Lipid peroxidation is a source of free radicals.[2007]
3. Defence mechanisms of the body to fight the toxicity of free oxygen species.[2004]
4. ROS damages cellular architecture.[2006]

CELL CYCLE AND CANCER, VITAMINS AND MINERALS

GROUP-C (3 MARKS) SHORT NOTES

1. Tumor markers.[2014]
2. Ceruloplasmin. [2014]
3. Cell cycle regulators.[2010]
4. Proto-oncogenes. [2009]
5. Activation of Proto-oncogenes.[2006]
6. Marker Enzymes.[2006]

GROUP – D (3 MARKS) EXPLAIN WHY

1. Radio Immuno Assay techniques has got demerits also.[2013]
2. Methotrexate is used for anti-cancer therapy.[2012, '11]

MOLECULAR ENDROCRINOLOGY AND SIGNALTRANSDUCTION

GROUP-A(12 MARKS)

1. Explain how normal blood sugar is maintained by various mechanisms.[12][2008, '04]

GROUP-B (7 MARKS)

1. Explain the mechanisms of signal transductions by cAMP, calcium and phosphatidyl inositol system with the help of diagrams.[7][2013]
2. In a flow diagram describe how insulin and glucagon regulate the process of lipogenesis and lipolysis in adipose tissue. [7][2010]
3. Discuss the different types of G-protein coupled signal transduction processes.[7][2010]

GROUP-C (3 MARKS) SHORT NOTES

1. G-protein[2011]
2. 3`-5` cAMP. [2004]
3. Receptors in signal transductions.[2007]
4. Insulin receptors. [2006]
5. Receptor enzymes. [2005]
6. Calcium as 2nd messenger. [2005]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Calcium as 2nd messenger.[2004]
2. Lipids can act as intracellular signals.[2012]
3. Receptor enzymes show intrinsic catalytic activity.[2009]

MOLECULAR BIOLOGY & GENETICS

GROUP-A (12 MARKS)

1. Describe the stage of initiation of translation process with the help of a diagram. State the mechanism of action of the following antibiotics in the inhibition of translation:
   A) Streptomycin,
   B) Erythromycin,
   C) Chloramphenicol. [6+6][2011]
2. Write down the different types of DNA damage. Explain the mechanisms of : Mismatch DNA repair, Base excision repair, Nucleotide excision repair. [6+6][2011]
3. Describe the process of synthesis of proteins in prokaryotes. What are the roles of different antibiotics to inhibit the process of translation in prokaryotes. [8+4][2009]
4. Describe the process of replication in *E.Coli* with suitable diagram. Mention the differences among different *E.Coli* polymerases.[8+4][2008,'05]

GROUP-B(7 MARKS)

1. Describe the initiation, elongation and termination phase of transcription in eukaryotes. Name the antibiotics which specifically inhibit the microbial protein synthesis.[5+2][2015-12 marks] [2013]
2. Describe how ribonucleic acid is synthesized . Indicate the difference b/w DNA Polymerase III and RNA polymerase.[5+2][2010]
3. Indicate the different mechanisms of DNA repair.[7][2007]
4. Define mutation. Describe different types of mutations with examples.[1+6][2005]
5. Describe the operon model. Explain how it functions.[4+3][2004]
6. Give an account of negative and positive regulation of lac operon in *E.Coli*. [2015][7]
7. Enumerate the DNA damaging agents and indicate the types of damages made by them.[7][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Eukaryotic topoisomerase. [2014]
2. Polyclonal antibodies. [2014]
3. Radioisotopes. [2014]
4. Base excision repair of DNA.[2013]
5. Frame shift mutation. [2013]
6. Restriction Fragment Length Polymorphism (RFLP). [2011]
7. Monoclonal antibodies. [2011]
8. Gene therapy. [2009]
9. RNA processing. [2009]
10. Ribozyme.[2008, '07]
11. Restriction Endonuclease enzyme.[2008, '06]
12. Genome of Retrovirus. [2007]
13. PCR(Polymerase Chain Reaction). [2005]
14. Mismatch DNA repair. [2005]
15. Point mutation. [2016]
16. DNA replication in eukaryotes and prokaryotes.[2015]
17. RNA editing.[2015]

GROUP-D (3 MARKS) EXPLAIN WHY

1. RNA can act as enzyme.[2011]
2. DNA denaturation is essential for hybridization. [2007]
3. Genetic code is degenerative and unambiguous. [2005]
4. DNA is much more stable than RNA. [2016]
5. Ribosome is the ultimate ribozyme.[2017]

TEN YEAR'S QUESTION FOR FIRST PROF. MBBS EXAM.- PHYSIOLOGY
GENERAL & NERVE MUSCLE PHYSIOLOGY

GROUP-A (12 MARKS)

1. Describe the neuromuscular junction with proper diagram and labeling. Describe how an AP in motor nerve produces an AP in muscles. What is Myasthenia gravis and Lambert Eaton Syndrome?[4+5+3][2010]

GROUP-B (7 MARKS)

1. Describe briefly the molecular mechanism of muscle contraction. What is Myasthenia Gravis? [5+2][2014]
2. Write the molecular basis of skeletal muscle contraction. Write a short note on neuromuscular blockers.[4+3][2012][2016]
3. Discuss the role of ATP in skeletal muscle contraction & relaxation. What is rigor mortis?[5+2][2011]
4. Define resting membrane potential. How is it generated? What is Donnan's effect?[2+3+2][2006]
5. Describe the neuromuscular junction and mention neuromuscular blockers. [5+2][2005]
6. What are the differences b/w AP curves of skeletal muscles and working myocardial cells? [7][2015]
7. Discuss the mechanism of action of different neuromuscular blockers. [7][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Gibbs-Donnan equilibrium. [2014]
2. Ion channels. [2014]
3. Facilitated diffusion. [2013, '09]
4. Gap junction. [2013]
5. Na+-K+ ATP ase. [2012][2016]
6. Rigor mortis. [2012]
7. GLUT. [2011]
8. Secondary Active Transport. [2010,'08, '07, '05][2015]
9. Molecular mechanism of muscle contraction. [2008]
10. Chronaxie and Rheobase. [2007]
11. Exocytosis and endocytosis. [2006]
12. Smooth muscle.[2005]
13. Isotonic and isometric contraction.[2004]
14. Gap-junctions.[2016]
15. Nernst equation. [2017]
16. Molecular motors. [2017]

GROUP- D (3 MARKS) EXPLAIN WHY

1. Relaxation of muscle is an active process. [2009]
2. Relaxation of muscle requires energy. [2007]
3. Digitalis increases the strength of cardiac contractions. [2017]

BLOOD

GROUP-A (12 MARKS)

1. Describe the structure of platelets. Mention the contents of their granules and their functions. What are the functions of platelets?[4+5+3][2014]
2. Describe the role of lymphocytes in immunity. What is acquired immunodeficiency syndrome (AIDS)? [8+4][2013]
3. What is haemophilia? Enumerate the steps of hemostasis. Describe the intrinsic pathway of coagulation.[2+3+7][2013]
4. Discuss the role of neutrophils in defense. What is innate immunity?[8+4][2012]
5. What is haemostasis? Name the different coagulation factors required for coagulation and draw a brief outline of the events of coagulation. Write in short the role of platelets in haemostasis. Justify the role of aspirin for prevention of stroke.[1+5+3+3][2011][2016]
6. What is haemopoiesis? Describe the different stages of development of erythrocytes. Discuss the different factors in the regulation of erythropoiesis. What is reticulocyte crisis and when it occurs? [1+4+5+2][2008][2015]
7. Enumerate the plasma proteins. Describe the properties and functions of plasma proteins. How does hypoproteinemia produce edema?[2+4+4+2][2007]
8. Define antigen and antibody. Give a short account of humoral immunity. What is AIDS? [3+7+2][2006]

GROUP-B (7 MARKS)

1. What is erythroblastosis foetalis? What are the hazards of mismatched blood transfusion? [2+5][2013]
2. What do you mean by immunity? What are the different types of immunity? Give an account of humoral immunity.[1+2+4][2010, 2007]
3. Define jaundice. Compare obstructive and hemolytic jaundice.[2+5][2010]
4. What is the principle of blood transfusion? Describe the hazards of blood transfusion. [3+4][2009]
5. Fibrinolytic system. [7] [2004]
6. Tissue macrophage system. [7][2004]
7. Describe the preservation injuries in stored blood . Mention the deleterious effects of repeated blood transfusion.[4+3][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. ESR. [2012, 2009]
2. Erythropoietin. [2010]
3. Erythroblastosis foetalis. [2009][2016]
4. Rh incompatibility. [2008]
5. Functions of neutrophil. [2006]
6. Platelet functions. [2006]
7. Haemolytic jaundice. [2006]
8. Humoral v/s cell mediated immunity. [2004]
9. Hemolytic jaundice v/s Obstructive jaundice.[2004]
10. Hemoglobinopathies.[2017]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Anemia occurs after gastrectomy. [2013][2015]
2. Low plasma protein causes edema. [2012]
3. Normal plasma proteins prevent edema. [2014]
4. Aspirin in low dose prevents intravascular coagulation.[2012, '08][2016]
5. Regular low dose of aspirin prevents thrombosis.[2014]
6. In hemolytic jaundice, urine is not coloured. [2011]
7. Coagulation disorders in liver disease. [2009]
8. Loss of immune function occurs in AIDS. [2008]
9. Fetal Hb is more saturated with oxygen than adult Hb at the same pO_2. [2007]
10. A sharp fall in capillary blood pressure will result in drawing of fluid from the tissue to the capillary. [2004]
11. Loss of helper T cells leads to death. [2003]
12. Anemia occurs in iron deficiency.[2002]
13. Oxyhemoglobin binds less H^+ than reduced Hb.[1999]
14. Anemia occurs in chronic renal failure. [2016]
15. Coagulation time is prolonged in obstructive jaundice.[2015]

RESPIRATORY SYSTEM

GROUP-A (12 MARKS)

1. Describe the transport of oxygen from atmosphere to tissue. What is P_{50} and its significance?[10+2][2010]
2. Define and classify hypoxia. Mention the features of hypoxic hypoxia. What do you mean by acclimatization?[4+6+2][2009, '06]
3. What is compliance of lungs? How do you measure compliance of lungs? Name the clinical conditions which reduce & increase compliance of lungs.[2+5+5][2004]

GROUP-B (7 MARKS)

1. Describe the oxygen dissociation curve and the factors influencing it. [3+4][2014]
2. What is Bohr's effect? How CO_2 is transported from tissues to the lungs. [2+5][2013][2016]
3. What is hypoxia? What are the adaptations that occur when a person ascends to an altitude of 12000 feet?[2+5][2012]
4. What is ventilation-perfusion ratio? How is altered in health and diseases? [2+5][2007]
5. What is pulmonary surfactant? Explain its role in the maintenance of stability of alveoli. [2+5][2005][2015]
6. Artificial respiration. [2004]
7. Compare and contrast b/w static and specific compliance of the lungs. What is the role of surfactant in maintaining compliance of the lungs?[3+4][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Haldane effect.[2014]
2. Maximum ventilation volume. [2014]
3. Lung compliance. [2013]
4. Surfactant. [2012]
5. Asphyxia. [2011][2007]
6. Apneustic centre. [2010]
7. Ventilation perfusion ratio.[2008][2016]
8. Carotid body. [2007]
9. Periodic breathing. [2005]
10. Bohr effect v/s Haldane effect. [2004]
11. Timed vital capacity. [2015]
12. Peak expiratory flow rate. [2015]

GROUP-D (3 MARKS) EXPLAIN WHY

1. In anemic hypoxia, O_2 therapy is not of much importance. [2011]
2. Increase in pulmonary ventilation occurs even after exercise is over. [2011][2010]
3. RBC in venous blood is larger than arterial blood.[2014, 2010][2005]
4. Apnoea occurs after hyperventilation. [2009]
5. Cyanosis does not occur in severe anemia.[2009]
6. Cheyne-Stokes breathing occurs in voluntary hyperventilation. [2008]
7. Respiration rate increases with exercise. [2007]
8. There is increased respiratory rate during exercise. [2004][2016]
9. In COPD, O_2 therapy should be intermittent and of low concentration.[2017]

CARDIOVASCULAR SYSTEM

GROUP-A (12 MARKS)

1. Describe the different waves of ECG and segments with its neat diagram. Mention their importance. What is heart block?[6+2+4][2014]
2. Describe in brief the regulation of blood pressure. What is malignant hypertension? What is vasomotor reversal of Dale? [8+2+2][2012]
3. What is cardiac cycle? Describe with suitable diagram the pressure and volume change in left ventricle in the different phases of cardiac cycle. Enumerate the differences b/w 1st and 2nd heart sounds. [2+6+4][2011]
4. Define cardiac output and Fick's principle of measuring cardiac output. Describe various factors regulating cardiac output. [2+6+4][2009]
5. What are the functional tissues of the heart? How cardiac impulse is generated and transmitted across the heart . Describe cardiac AP and skeletal muscle AP. What is idioventricular rhythm?[2+4+4+2][2008][2016]
6. What do you understand by arterial blood pressure? Describe the regulation of arterial blood pressure. What is essential hypertension? [2+8+2][2007]
7. Describe the sequence of events that occur in the heart during cardiac cycle. What happens to the duration of the systole and diastole in severe exercise? How the coronary blood flow maintained during exercise? [5+3+4][2005]
8. What is cardiac output? Discuss the effects of various factors regulating cardiac output. Write two clinical findings with explanation of aortic incompetence.[2+6+4][2004][2015]
9. Describe briefly the cardiovascular reflexes.[12] [2017]
10. Describe the physiologic anatomy of the different regions of thebsystemic circulation and mention how correlate with their functions. What is Poiseuille-Hagen formula ?[8+4][2017]

GROUP-B (7 MARKS)

1. What is the Marey's law? What is its physiological basis? Name two conditions when it is not observed.[2+4+1]
2. What is cardiac output? Describe one method for estimation of cardiac output. [2+5][2011]
3. What is baroreceptor reflex? Describe the role of baroreceptor in maintenance of BP with proper diagram and labeling. [2+5][2010]

GROUP-C (3 MARKS) SHORT NOTES

1. CVS adjustments during exercise. [2011]
2. Standard leads in ECG. [2011]
3. Augmented limb leads during ECG. [2010]
4. Peripheral resistance. [2008]
5. PR interval and its clinical importance. [2007]
6. Carotid body. [2007]
7. Heart sounds . [2006]
8. Normal ECG waves. [2005]

9. 2nd degree AV nodal block. [2016]
10. PR interval in ECG. [2015]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Diastolic pressure rises on assuming standing posture from supine position. [2014]
2. Maximum blood flow to the left ventricle occurs during diastole.[2013]
3. Vasodilation occurs in the blood vessels of skeletal muscles during exercise. [2012]
4. Brief period of straining causes tachycardia and increase in peripheral resistance. [2011,'10][2017]
5. Common carotid artery occlusion causes increased blood pressure. [2008,'07]
6. Sino-aortic nerves are called buffer system of BP regulation. [2006]
7. SA node is the pacemaker of the heart. [2006]
8. Coronary blood flow is more in diastolic phase than the systolic phase in cardiac cycle. [2006][2016]
9. Left coronary artery blood flow is more during diastole. [2004]
10. Controlled exercise is beneficial to patients with cardiac diseases. [2005]
11. During prolonged inspiration , there occurs splitting of 2nd heart sound. [2005]
12. Heart muscle cannot be tetanized in vitro. [2003]
13. Bradycardia in athlete. [2002]
14. In cardiac disease, pulse rate can be lesser than the heart rate.[2015]

GASTRO-INTESTINAL SYSTEM

GROUP-A (12 MARKS)

1. Give an account of the composition, function & control of secretion of the pancreatic juice. Describe the pancreatic exocrine function test. [3+3+3+3][2005]

GROUP-B (7 MARKS)

1. Define jaundice. Describe the differences between hemolytic & obstructive jaundice.[2+5][2014]
2. What is gastric mucosal barrier? Discuss the physiological basis of management of peptic ulcer. [2+5][2013][2008]
3. Write down the different intestinal movements. What is adynamic ileus? [5+2][2012]
4. What are micelles? Describe the role of bile salts in fat absorption. [2+5][2009]
5. List the function of bile salts. What are the results of complete biliary obstruction? [1+3+3][005]
6. What is the mechanism of HCL secretion in the stomach? Give the physiological basis of treatment of peptic ulcer with omeprazole. [5+2][2007]2016]
7. Describe the composition and functions of bile.[7][2006]

GROUP-C (3 MARKS) SHORT NOTES

1. Why is intestine not digested by enzymes? Name the GI hormones.[2014]
2. MMC. [2013]
3. Mucosal barrier of stomach.[2012]
4. Bile salt. [2011]
5. BER. [2010]
6. Gastrin. [2009][2015]
7. Enterohepatic circulation of bile. [2009]
8. Movements of small intestine.[2009]
9. Dumping syndrome. [2017]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Steatorrhea occurs in obstructive jaundice. [2006]
2. Bile salts help in fat absorption. [2004]
3. Urine becomes alkaline temporarily after a heavy meal. [2005]
4. Omeprazole is used in treatment of peptic ulcer. [2004]
5. Mucosal barrier protects gastric epithelium from damage. [2003]
6. Fatty meal delays gastric emptying. [2002][2017]
7. Before vomiting profuse salivation occurs. [2001]
8. Thought of delicious food induces salivary secretion. [2015]
9. Coagulation time is prolonged in Obstructive jaundice. [2015]

EXCRETORY SYSTEM

GROUP-A (12 MARKS)

1. Describe the various sites and mechanisms by which water is reabsorbed from the nephrons. Why polyuria occurs in Diabetes insipidus. [3+7+2][2009]

GROUP-B (7 MARKS)

1. Differentiate b/w cortical & juxta-medullary nephrons. Briefly discus the counter-current mechanism in the kidney. [2+5][2014]
2. What is the site of production of Renin? Name the stimulants for Renin secretion. What is the sequence of events in the Renin-Angiotensin-Aldosteron System?[1+2+4][2013]
3. What is GFR? Describe the factors influencing it. What is filtration fraction? [1+5+1][2012]
4. Define polyuria. What are the causes of polyuria? Why polyuria occurs in Diabetes Insipidus? [2+2+3][2011]
5. What is the normal pH of urine? How the normalcy of pH is maintained in urine? [1+6][2010]& [2+5][2008]

6. Describe the role of Loop of Henle and vasa recta in kidney function. [7][2007]
7. Describe the mechanism of glucose reabsorption by kidney tubules. What is GFR and how is it regulated? [4+3][2006]
8. Describe the mechanism of concentration of urine. What is anuria? [5+2][2005][2017]
9. State briefly how urine is acidified. How excess acidification is prevented? What are the advantages of having acidic urine?[2+3+2][2015]
10. What is the role of kidney in maintaining the acid-base balance of the body? [7][2016]

GROUP-C (3 MARKS) SHORT NOTES

1. Counter current multiplication. [2013]
2. Renal clearance. [2011]
3. Renin. [2011]
4. Creatinine clearance test. [2010, '08]
5. Juxta Glomerular apparatus. [2010, '05]
6. Renal Function Tests. [2007]
7. Cortical nephrons v/s Juxta medullary nephrons.[2004]
8. Vasa recta. [2015]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Albuminuria occurs in nephritic syndrome.[2014]
2. Osmotic dieresis occurs in Diabetes Melitus. [2012][2007]
3. Chronic renal failure patients have anemia.[2012]
4. Inulin clearance is equal to GFR. [2006]
5. Vasa recta are essential for concentration of urine.[2004]
6. Frusemide is used as a diuretic. [2016]
7. Volume of urine can increase after drinking a large volume of water. [2015]

REPRODUCTIVE SYSTEM

GROUP-B (7 MARKS)

1. Describe the female sexual cycle. . What is LH surge? [6+1][2013][2011][2009][2005][2015][2017]
2. Describe the spermatogenesis. What is blood-testes-barrier? [5+2][2014, '12]
3. What is spermatogenesis? Describe the hormonal control of it.[2+5][2010, '08]
4. What is corpus luteum? What is its role in menstrual cycle and pregnancy? [2+3+2][2007]
5. Spermatogenesis. [7][2004]

GROUP-C (3 MARKS) SHORT NOTES

1. Secretion and ejection of milk. [2013,'04]
2. Contraceptive pills. [2012, 2006]
3. OCP.[2014]
4. Ovulation. [2010]
5. Sertoli cell. [2009]
6. Immunological basis of pregnancy test. [2008]
7. Graafian follicle. [2007]
8. Prolactin. [2006]
9. Hormonal regulation of testicular activities. [2017]
10. LH surge. [2016]
11. Safe period method for contraception.[2016]
12. Evidences for ovulation.[2015]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Pregnancy is associated with stoppage of menstruation.[2014][[2013]
2. Prolonged breast feeding is helpful in family planning. [2013, '12]
3. During lactation, menstrual bleeding does not occur upto six months. [2010]
4. Sterility is more common in men working in heat surrounds. [2010]
5. Gonadotropin level increases in serum after menopause. [2007][2017]
6. Conversion of testosterone to dihydro-testosterone is essential for full sexual maturity in male. [2014]
7. Pregnancy usually does not occur during lactation.[2016]

ENDOCRINE SYSTEM

GROUP-A (12 MARKS)

1. What are the hormones secreted by adrenal cortex. Describe the principal functions of the mineralocorticoids. What is Conn's syndrome?[3+7+2][2014]
2. Enumerate the functions of calcium in our body. How its homeostasis is maintained by involving different hormones? What are the sources of these hormones? Name the features of Rickets and Osteomalacia. [2+4+2+4][2013][2017]
3. What is blood calcium level? Name the physiological functions of Ca^{2+} in the body. Discuss briefly how the blood calcium level is maintained? [1+3+8][2008][2005][2017]
4. Describe the physiological effects of thyroid hormones. What is thyroid storm? [10+2][2012][2017]
5. Name the various layers of adrenal cortex and the hormones secreted from them. What are the effects of glucocorticoids ? Describe Cushing's syndrome.[2+7+3][2011]
6. Enumerate the hormones secreted from thyroid gland. Describe the functions of thyroxin. Write a brief note on Cretinism. [2+7+3][2010]

7. Enumerate the hormones of anterior pituitary gland. Describe the functions of thyroxin. Mention the cells from where the hormones are secreted. Describe the features of gigantism and acromegaly. What are somatomedins? [2+2+3+3+2][2007]
8. Outline the steps of synthesis of thyroid hormones. List the main actions of thyroid hormones. Mention the features of clinical conditions related to the hypo-functioning of the gland.[3+4+5][2006]
9. Classify the hormones of adrenal cortex. State the steps of biosynthesis and functions of aldosterone. What is aldosterone escape phenomenon? [3+3+3+3][[2004]
10. Name the hormones of islets of Langerhans. State the functions of insulin. Why polyphagia occurs in diabetes mellitus? [2+7+3][2015]

GROUP-B (7 MARKS)

1. List the hormones of calcium metabolism and mention the features of tetany. [4+3][2009]
2. Myxedema . [7][2004]

GROUP-C (3 MARKS) SHORT NOTES

1. ADH.[2014]
2. Cretinism. [2013]
3. Glucocorticoids. [2013]
4. Acromegaly. [2011]
5. Cushing's Syndrome. [2010]
6. Dwarfism. [2009]
7. Biological Clock. [2009]
8. Aldosterone and ANP. [2007]
9. Vit. D. [2006]
10. Hypoglycemia. [2006]
11. Tetany. [2005][2017]
12. Adission's disease. [2005][2016]
13. Adenohypophysis v/s Neurohypophysis. [2004]
14. Permissive action of hormones.[2017]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Exercise is good for diabetes mellitus. [2013]
2. Metabolic acidosis may be found in diabetes mellitus. [2013]
3. Diabetes mellitus is characterized by polyphagia. [2010]
4. Food intake is increased in diabetes mellitus. [2008]
5. IN hyperthyroid state, beta 2 blocker are used. [2009]
6. Hyperglycemia after pancreatectomy is corrected by hypophysectomy in experimental animal.[2006]
7. Thyroid dwarfs are mentally retarded. [2005]
8. Hyper pigmentation of skin in Addision's disease. [2004]

CENTRAL NERVOUS SYSTEM

GROUP – A(12 MARKS)

1. With diagram write the components of limbic system. What are the vegetative functions of the hypothalmia? What are the roles played by the hypothalamus in Reward and Punishment. [3+5+4][2014][2017]
2. What are the functional divisions of cerebellum. With a diagram show the to and fro connections of the cerebellum. Enumerate the functions of the cefebellum and the clinical manifestations following its lesion. [2+3+3+4][2013][2009][2007]
3. Describe the nuclei , connections and functions of basal ganglia. What are the features of Parkinsonism and how can these be reduced? [7+5][2012]
4. Name the different components of basal ganglia. List the pathways that interconnect them. What are the functions of basal ganglia? Write down the features of Parkinson's disease and its remedy.[2+3+3+4][2010][2008][2004][2016]
5. Define synapse. What is synaptic potential? Give ionic basis of development of it with proper diagram and labeling. Write about the important properties of synapse.[1+5+6][2011]
6. What is muscle tone? Describe with a diagram how this tone is maintained. How do you explain the Clasp Knife Rigidity in case of UMN lesion. [2+5+5][2006]
7. Trace the neural pathways for pain sensation. What is stress analgesia and how it is brought about? Explain the gate control theory of pain.[5+3+4][2005]
8. Give an account of origin, course and termination of the pyramidal tract with a diagram. What is Babinski sign? [10+2][2015]

GROUP-B (7 MARKS)

1. What is muscle tone? How is it regulated? [2+5][2011]
2. Describe the central pain inhibiting mechanism. [7][2010]
3. What is stretch reflex? With the help of a diagram describe the reflex arc. Give the differences b/w static and dynamic stretch reflex. [1+4+2][2007]
4. Synaptic inhibition. [7][2004]
5. Name the main ascending tracts of spinal cord and enumerate their functions. What is phantom limb phenomenon and describe the law governing it. [5+2][2017]

GROUP-C (3 MARKS) SHORT NOTES

1. Fluent aphasia. [2014]
2. EPSP. [2012]
3. Brown-Sequard syndrome. [2012]
4. Paradoxical sleep. [2011]
5. B wave in ECG. [2011]
6. Decerebrate rigidity. [2010, '08, '06][2017]
7. Alpha block. [2009]
8. EEG waves. [2014, '08]

9. Synaptic inhibition. [2007][2015]
10. UMN v/s LMN lesion. [2004]
11. Normal waves of EEG. [2016]
12. REM sleep. [2015]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Babinski's sign is a defining feature of UMN paralysis.[2014][2005][2008]
2. Finger nose test becomes abnormal in cerebellar disorder. [2013][2017]
3. Speech becomes meaningless if arcuate fasciculus is damaged. [2012, '08]
4. Dissociated anesthesia is seen in syringomylia. [2011][2016]
5. Touching and shaking of an injured part can reduce pain sensation. [2009]
6. Intercollicular transaction in cat produces rigidity. [2007]
7. Purely pyramidal tract lesion is associated with hypotonia. [2007]
8. Sympathetic nervous system is a nerve of emergency whereas parasympathetic nervous system is a nerve of constancy. [2006]
9. L-Dopa is a drug of choice for the treatment of Parkinsonism. [2005][2015][2017]
10. Decerebrate rigidity is an example of release phenomenon. [2004]
11. Visceral pain is often referred to a somatic structure. [2004]
12. REM sleep is also called paradoxical sleep. [2017]

SPECIAL SENSES

GROUP-B (7 MARKS)

1. Describe the photochemical changes that occur in the retina. What is night blindness? [5+2][2013]
2. Name the photosensitive pigments of retina. Describe the sequence of events involved in photo-transduction in rods and cones.[4+3][2006]
3. Describe the auditory pathway with suitable diagram. How will you differentiate b/w conduction deafness and sensonural deafness? [5+2][2012,'08]
4. Trace the neural pathways that transmit visual information from photoreceptors to the visual cortex. Enumerate the visual field defects produced by lesions at various levels of the visual pathway. [3+4][2014]
5. Trace the visual pathway upto the occipital cortex. [7][2009]
6. Trace the course of visual pathway with a diagram. What are the effects of lesions at various sites of the path? [4+3][2005]
7. Name the common errors of refraction. Explain the use of corrective lenses in each of them. [[2+5][2015]
8. With a suitable diagram, explain the effects of lesion in the visual pathway at various levels. What is Argyll-Robertson pupil?[5+2][2016]

GROUP-C (3 MARKS) SHORT NOTES

1. Organ of Corti. [2013, '05][2017]
2. Accommodation reflex. [2012]
3. Colour blindness. [2008]
4. Colour vision. [2007]
5. Taste buds. [2014, '05]
6. Lateralisation in Weber's test. [2016]

GROUP-D (3 MARKS) EXPLAIN WHY

1. Near point recedes with ageing. [2013,'09]
2. In Argyll-Robertson pupil, light reflex is lost. [2011]
3. In retina, the fovea centralis is the point of greatest visual acuity. [2010]
4. Optic tract lesion leads to homonymous hemianopia. [2008]
5. Pituitary tumor can cause bitemporal hemianopia. [2006]
6. In conductive deafness Weber test is lateralized to the diseased ear. [2005]
7. When a person is exposed to some odour for sometime, the perception of that odour decreases. [2016]