



RAN - 1906000101010001

RAN-1906000101010001

1st MBBS Examination

January - 2021

Anatomy (Set-2) Paper - I

Old Pattern

Time: 3 Hours]

[Total Marks: 50

સૂચના : / Instructions

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

1st MBBS

Name of the Subject :

Anatomy (Set-2) Paper - I Old Pattern

Subject Code No.: 1906000101010001

Seat No.:

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Student's Signature

- (2) Write each section in separate answer book.
- (3) Draw labelled diagram wherever required.
- (4) Figures to right indicate marks.
- (5) Write to the point.

SECTION - 1

Q-1. Write short notes explaining anatomical/embryological basis of any two - 10 marks

- a) Applied anatomy of scalp
- b) Claw hand
- c) Lateral medullary syndrome

Q-2. A. Write short notes on any two - 06 marks

- a) Axillary nerve
- b) Anastomosis around elbow joint
- c) Rotator cuff

B. Write short notes on any one -

03 marks

- a) End artery
- b) Sesamoid bone

Q-3. Write short notes on -

06 marks

- a) Development of palate or folding of embryo
- b) IVF or Notochord

SECTION - 2

Q-4. Write short notes on any two -

10 marks

- a) Nerve supply of tongue
- b) Posterior triangle
- c) Nasal septum

Q-5. A. Write short notes on any two -

06 marks

- a) Cerebral peduncle
- b) Red nucleus
- c) Medial geniculate body

B. Write short notes on any one-

03 marks

- a) Histology of cartilage
- b) Histology of thymus

Q-6. Write down one or two line answer of any six -

06 marks

- a. Give any 4 derivatives of 2nd pharyngeal arch
- b. What is the cause of carpal tunnel syndrome?
- c. Name any 4 muscles supplied by median nerve in hand
- d. Give 2 examples of saddle joint
- e. Write down the content of cubital fossa
- f. Enumerate the 4 branches of external carotid artery
- g. Name the cranial nerves arise from medulla
- h. Write down the 4 parts of internal capsule



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Ist MBBS Paper-I Examination

January - 2021

Anatomy, Paper-I (Set-II)

New CBME Curriculum Pattern

Time: 3 Hours]

[Total Marks: 100

सूचना : / Instructions

(१)

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Name of the Examination:

Ist MBBS Paper – I

Name of the Subject :

Anatomy, Paper-I (Set-II) New CBME Curriculum Pattern

Subject Code No.: 2006000101010001

Seat No.:

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Student's Signature

- (2) Write each section in separate answer book.
- (3) In section A, All MCQ are compulsory, only one answer will be accepted, No negative marking, correct answer must be Marked in OMR SHEET with black pen, & submit in first 30 minutes.
- (4) Draw labelled diagram wherever required.
- (5) Figures to right indicate marks.
- (6) Write to the point.

SECTION A – MCQ

1x20=20

1. All of the following structures form Boundaries of Digastric triangle except:
 - a. Anterior belly of digastric
 - b. Posterior belly of digastric
 - c. Superior belly of Omohyoid muscle
 - d. Base of mandible

- 2. All of the following are contents of carotid sheath except:
 - a. Internal Carotid Artery
 - b. External Carotid Artery
 - c. Internal Jugular Vein
 - d. Vagus Nerve

- 3. Which layer of the scalp is called as 'dangerous layer':
 - a. Layer of Loose areolar tissue
 - b. Pericranium
 - c. Subcutaneous Layer
 - d. Aponeurotic layer

- 4. All of the following are branches of mandibular Nerve except:
 - a. Inferior alveolar Nerve
 - b. Buccal Nerve
 - c. Auriculotemporal Nerve
 - d. Zygomatic Nerve

- 5. All of the following are branches of External Carotid artery except:
 - a. Superior Thyroid artery
 - b. Inferior Thyroid Artery
 - c. Facial artery
 - a. Lingual artery

- 6. Damage to ulnar nerve at elbow will produce all except
 - a. Flattening of medial border of forearm
 - b. Ulnar claw hand
 - c. Sensory loss on medial one and half fingers including nail bed
 - d. Pointing index finger

- 7. Incorrect statement about Midpalmar space is
 - a. It is situated under the inner half of the hollow of the palm
 - b. It communicates proximally to forearm space of Parona
 - c. It communicates distally with Fascial sheath of 3rd and 4th lumbrical
 - d. Drainage of pus from this space is done by putting an incision in first web space.

- 8. What type of joint is superior Radio ulnar joint?
 - a. Pivot
 - b. Hinge
 - c. Saddle
 - d. Plane

9. Which of the following muscle causes protraction of Scapula?
- a. Levator Scapulae
 - b. Trapezius
 - c. Serratus Anterior
 - d. Latissimus dorsi
10. Miner's elbow is
- a. Subluxation of head of the radius
 - b. Pain and Tenderness at medial epicondyle of humerus
 - c. Inflammation of bursa over subcutaneous posterior surface of olecranon process
 - d. Pain & tenderness at lateral epicondyle of humerus
11. Importance of metaphysis is because all of the following reasons, except:
- a. Highly vascular
 - b. Hair pin bends of Nutrient vessels
 - c. Cupping of metaphysis in osteomyelitis
 - d. Infection of long bone starts here
12. Which pair of the following is wrong?
- a. Unipennate- Flexor Pollicis Longus
 - b. Circumpennate- Peroneus Tertius
 - c. Bipennate- Rectus Femoris
 - d. Multipennate- deltoid
13. Hyaline cartilage is found in:
- a. Epiglottis
 - b. Costal cartilage
 - c. Intervertebral disc
 - d. Pinna of Ear
14. Skeletal Muscle is present in all of the following structures except:
- a. Tongue
 - b. Limb muscles
 - c. Upper Oesophagus
 - d. Stomach

15. Chordoma arises from remnants of
- a. Spinal cord
 - b. Nephrogenic cord
 - c. Notochord
 - d. Umbilical cord
16. Limb muscles develop from
- a. Paraxial mesoderm
 - b. Lateral plate mesoderm
 - c. Splanchnic mesoderm
 - d. Neural crest cells
17. All of the following are intracerebellar nuclei except
- a. Dentate Nucleus
 - b. Fastigial Nucleus
 - c. Globose Nucleus
 - d. Red Nucleus
18. Corpus striatum includes all of the following except:
- a. Caudate Nucleus
 - b. Putamen
 - c. Globus Pallidus
 - d. Dentate Nucleus
19. Which of the following is not a part of diencephalon:
- a. Medial geniculate body
 - b. Lateral geniculate body
 - c. Pulvinar
 - d. Pineal body
20. The brainstem consist of all of the following components except:
- a. Midbrain
 - b. Pons
 - c. Medulla
 - d. Cerebellum

SECTION B

Marks: 40

Question 2. Write down any 2 case scenario questions —

16 marks

1. A 12 year old boy is brought to emergency department with a history of head injury. Later on a boy developed bluish discoloration around eye. (Black eye) (2+2+4 marks)
 - a. Give anatomical basis of black eye in head injury
 - b. Enumerates the layers of scalp
 - c. Write applied aspect of scalp.

2. A baby boy delivered by forceps delivery a week ago was brought to paediatrician by her parents with complains that baby's right arm was medially rotated and adducted and his forearm was extended and pronated. Doctor also noticed sensory loss on lateral aspect of right arm. (1+2+5 marks)
 - a) What is the name of this condition
 - b) What is the site of lesion and cause that produce such lesion?
 - c) Enumerate branches arising from cords of Brachial plexus and draw diagram of brachial plexus.

3. A 65 year patient presented with resting tremors of hand, mask like facies, shuffling gate. A careful physical examination by a neurologist revealed increased muscle tone and cogwheel type of rigidity of joints. A clinical diagnosis of parkinsonism was made. (4+3+1 marks)
 - a) What is an anatomical basis of Parkinsonism?
 - b) What is basal ganglia and describe its parts.
 - c) Deficiency of which neurotransmitter is found in this condition?

Question. 3. A) Write short note — (2 out of 3)

10 marks

1. Describe radio ulnar joint in detail with its applied aspect.
2. Describe location, formation & branches, superficial palmar arch.
3. Describe lymphatic drainage of breast with its applied aspect.

B) Write short notes on—

10 marks

1. Amniocentesis or Notochord
2. Spina bifida or Development of face

C) Write short notes on any one—

4 marks

3. Cartilaginous joint
4. Describe in brief types of circulation

Section C

Marks: 40

Question 4 Long question (two out of three) 16 marks

- 1) Describe formation, location, contents, and tributaries of cavernous sinus. Also give in brief about cavernous sinus thrombosis.
- 2) Describe lateral wall of nose under following headings- its characteristic features, enumerate the openings into it. Also give in brief about middle meatus.
- 3) Describe location & extent, capsules, blood supply, & applied aspect of thyroid gland

Question 5 A) Write short note- (2 out of 3)

10 marks

- 1) Describe Medial medullary syndrome
- 2) Sensory speech area
- 3) Describe corpus callosum under following headings—Definition, parts, functions, & applied anatomy.

B) Write short note on histology of-

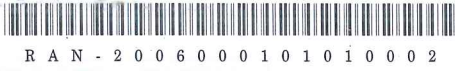
10 marks

- a) Transitional epithelium or Mixed salivary gland
- b) Tonsil or tongue

C) Write short note— (any one)

4 marks

- a) Implantation
- b) Epiphysis
- c) Fibro cartilage



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1st MBBS Examination

January - 2021

Anatomy, Paper-2, (Set - I),

New CBME Curriculum Pattern

Time: 3 Hours]

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Anatomy, Paper-2, (Set - I), New CBME Curriculum Pattern

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Student's Signature

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- (4) Draw labelled diagram wherever required.
- (5) Figures to right indicate marks.
- (6) Write to the point.

SECTION A - MCQ

1 × 20 = 20

1. Which of the following is not a characteristic feature of large Intestine?
 - a) Sacculation
 - b) Villi
 - c) Appendices epiploica
 - d) Taenia coli

2. Following is not a content of spermatic cord?
- Ductus deference
 - Pampiniform plexus
 - Genital branch of genitor femoral Nerve
 - Seminal vesicle
3. True statement about gastrosplenic ligament is:
- Its anterior and posterior layers are derived from Lesser sac.
 - Its anterior and posterior layers are derived from greater sac.
 - Its anterior layer is derived from lesser sac and posterior layer is derived from greater sac.
 - Its anterior layer is derived from greater sac and posterior layer is derived from lesser sac.
4. Anterior Rectus Sheath just above pubic symphysis is formed by
- External Oblique aponeurosis
 - Aponeurosis of External Oblique, Internal Oblique and Transeversus Abdominis
 - Linea Alba
 - Internal oblique Only
5. Bronchopulmonary segment is apart of lung aerated by
- Primary Bronchus
 - Secondary Bronchus
 - Tertiary Bronchus
 - Trachea
6. Transeverse diameter of thoracic cage is increased by
- Pump handle movement of ribs
 - Bucket handle movement of ribs
 - Caliper movement of ribs
 - Contraction of diaphragm
7. Parts of transversus thoracis are all except
- Subcostalis
 - Intercostalis Intimi
 - Sternocostalis
 - Serratus posterior Superior

8. Which of the following structure run in intersegmental planes of lungs?
- Segmental Venules
 - Bronchial vessels
 - Pulmonary arteries
 - Bronchus
9. All tributaries of coronary sinus are guarded with valves except
- Anterior cardiac vein
 - Great cardiac vein
 - Oblique vein of left atrium
 - Small cardiac vein
10. All of the following are true about midgut rotation except
- Total anticlockwise rotation is 270 degree
 - First 90 degree anticlockwise rotation within the umbilicus
 - Remaining 180 degree anticlockwise rotation occurs within the abdominal cavity
 - Non rotation may cause gastroschisis
11. Arch of aorta does not develop from
- Ventral part of aortic sac
 - Left horn of aortic sac
 - Left fourth aortic arch artery
 - Left seventh intersegmental artery
12. Which of the following structures lies within the knee joint?
- Patellar ligament
 - Tibial collateral ligament
 - Fibular collateral ligament
 - Tendon of popliteus
13. Inversion of the foot is performed by which pair of muscles?
- Peroneus Longus and Peroneus Brevis
 - Peroneus Longus and Tibialis Posterior
 - Tibialis Anterior and Tibialis Posterior
 - Peroneus Brevis and Plantaris

14. After passing through obturator canal, division of obturator nerve (Anterior and Posterior) pass on either side of:
- Adductor longus
 - Sartorius
 - Adductor brevis
 - Adductor magnus
15. Which of the following is not a character of hamstring muscles?
- Origin from Ischial tuberosity
 - Nerve supply by deep peroneal nerve
 - They are flexor of knee and extensor of Hip joint
 - Insertion into one of the long bones of leg
16. Action of gracilis muscle are all except
- Adduction at hip joint
 - Flexion at hip joint
 - Flexion at knee joint
 - Medial rotation at knee joint
17. Podocytes are the cells that lines the:
- Glomerulus
 - Bowman's capsule
 - Tubules
 - Ducts
18. Classical hexagonal unit of liver is:
- Portal triad
 - Hepatic Lobule
 - Liver Acinus
 - Portal Lobule
19. Genotype of Klinefelter's syndrome is
- 45 XO
 - 47 XXX
 - 46 XX
 - 47 XXY

20. Following is an example of Autosomal Dominant inheritance
- Achondroplasia
 - Cystic fibrosis
 - Sickle cell anaemia
 - Haemophilia

SECTION B

Marks 40

Q-2. Write down any 2 case scenario questions —

16 marks

- A 30 years old male patient came to surgery OPD with a complaint of swelling in Right groin region. Swelling increases in size during standing and coughing. Answer the following questions. (1+2+5 marks)
 - What is this clinical condition?
 - What is Hesselbach's triangle and write its boundaries.
 - Which are the defensive mechanisms which prevent development of Hernia?
- A 60 years old male complained of feeling tightness, pressure within his chest which is accompanied by profuse sweating. He also had pain in precordium and radiating along medial side of left arm and forearm. With further investigation, he was diagnosed as a case of angina pectoris (1+2+5 marks)
 - What is angina pectoris?
 - Enumerate arteries supplying cardiac muscle and their origin.
 - Write any one artery supplying to heart in detail with its branches.
- A 30 years man came to the clinic with complaints of numbness over the right first interdigital cleft for about 2 months. He also had difficulty in walking & had to drag his right foot; he felt his right foot was drooping down & because of this, on examination he was not able to perform eversion & dorsiflexion of right foot. (1+4+3 marks)
 - What is probable diagnosis?
 - Give the anatomical basis of this condition.
 - Which muscles brought eversion & dorsiflexion movement of foot?

Q-3.A) Write short note - (2 out of 3)

10 marks

- Describe Locking & unlocking movements at knee joint in details with its applied aspect.
- Describe Formation & factors maintaining lateral longitudinal arch of foot with its applied aspect.

3. Describe Origin, course, relations, & branches of femoral nerve.

B) Write short note on - 10 marks

- a) Histology of skin or Histology of serous gland
- b) Histology of Testis or Histology of Ileum

C) Write short note - (1 out 2) 4 marks

1. Turner syndrome
2. Karyotyping

SECTION C

Marks 40

Q-4. Write down in details — (two out of three) 16 marks

1. Describe supports of uterus with its applied aspect.
2. Describe rectus sheath in detail with its applied aspect
3. Describe deep perineal pouch with its applied aspect

Q-5.A) Write short note - (2 out of 3) 10 marks

1. Pleura with its applied
2. Pericardial sinus with its applied
3. Typical intercostal space

B) Write short note - (2 out 3) 10 marks

1. Embryological basis of foramen ovale
2. Development of pancreas with its applied aspect
3. Descent of testis with its anomalies

C) Write short note - 4 marks

Precautions to take before embalming a cadaver

OR

Barium swallow



RAN - 1906000101010002

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Ist MBBS Examination

January - 2021

Anatomy : Paper - 2

(Old Pattern)

Time: 3 Hours]

[Total Marks: 50

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(1)

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Ist MBBS

Name of the Subject :
Anatomy : Paper - 2 (Old Pattern)

Subject Code No.: 1906000101010002

Seat No.:

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Student's Signature

- (2) Write each section in separate answer book.
- (3) Draw labelled diagram wherever required.
- (4) Figures to right indicate marks.
- (5) Write to the point.

SECTION - 1

Q. 1. Write short notes explaining anatomical/embryological basis of any two. 10 marks

- a) Sciatica
- b) Myocardial infarction
- c) Prolapse of Uterus

Q. 2. A. Write short notes on any two -

06 marks

- a) Femoral Nerve
- b) Inversion and Eversion of Foot
- c) Cruciate Ligaments of knee joint

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[1]

[P.T.O.]

P2145

B. Write short notes on any one -

03 marks

- a) Development of Interatrial septum
- b) Rotation of Gut

Q. 3. Write short notes on -

06 marks

- a) Down syndrome or Autosomal Dominant Inheritance
- b) Lyon's hypothesis or Karyotyping

SECTION - 2

Q. 4. Write short notes on any two -

10 marks

- a) Root of mesentery
- b) Inguinal canal
- c) Coeliac Trunk

Q. 5. A. Write short notes on any two -

06 marks

- a) Superior Mediastinum
- b) Hilum of Lung
- c) Typical intercostal nerve

B. Write short notes on any one -

03 marks

- a) Histology of Ovary
- b) Histology of Liver

Q. 6. Write down one or two line answer of any six -

06 marks

- a. What is bucket Handle movement?
- b. Enumerate the contents of Porta Hepatis.
- c. Enumerate any 4 muscles supplied by Medial Planar Nerve.
- d. Which are the parts of Fallopian tube from medial to Lateral side.
- e. Write two derivatives of Paramesonephric duct in female.
- f. What is the nerve supply of Cremaster muscle?
- g. What is Bronchopulmonary Segment?
- h. What is the function of Sertoli cells?



RAN - 2006000101020001

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First M.B.B.S. Examination

January - 2021

Physiology (New - CBME)

Time: 3 Hours]

[Total Marks: 100

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Name of the Examination:

First M.B.B.S.

Name of the Subject :

Physiology (New - CBME)

Subject Code No.: 2006000101020001

Seat No.:

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- (2) All the sections are compulsory.
- (3) Each section must be answered in separate sheets.
- (4) Each question must be answered relevantly, precisely and to the point.

SECTION A

Q-1 Multiple choice question (no negative marking)

20

1. Most of the body fluid is present in
 - A. ECF compartment
 - B. ICF compartment
 - C. Transcellular compartment
 - D. Intravascular compartment
2. Salt solution isotonic to plasma is
 - A. 0.65%
 - B. 0.9%
 - C. 1%
 - D. 5%

15. Electrical stimulation of Pneumotaxic center leads to
- A. Accelerated respiration B. Apnea
C. Forceful expiration D. None of the above
16. In obstructive lung diseases, the following statement is false
- A. FVC is reduced B. FEV₁ is decreased
C. Residual volume is increased D. FRC is decreased
17. Carbohydrate in the small intestine are digested by following enzymes except
- A. Lactase B. Sucrose
C. Ptyalin D. Maltase
18. Gastric emptying time is maximum for the diet
- A. Proteins B. Carbohydrates
C. Fats D. Fluid
19. Juxtamedullary nephrons
- A. Have longer loop of Henle
B. Less than 40% of total nephron
C. A & B are incorrect
D. A & B are correct
20. Pressure volume relationship in urinary bladder can be studied by
- A. Pilogram B. Cystometrogram
C. Cystoscopy D. None of the above

SECTION B

Q-2 Enlist the steps of hemostasis. Enumerate coagulation factors. Describe the coagulation pathways in detail. Name various anticoagulants used in vivo and in vitro. 1+2+5+2

Q-3 Answer in short (any 5) 15

- a. Non respiratory functions of lungs
- b. Lung compliance
- c. Bohr's effect
- d. Types of Hypoxia
- e. Factors affecting diffusion
- f. Vital capacity

Q-4 Write short notes on (any 3) 15

- a. Juxta glomerular apparatus
- b. Distal convoluted tubules
- c. Renin angiotensin aldosterone system (RAAS)
- d. Functions of kidneys

SECTION C

Q-5 Define following: 3+5+2

- ECG (Electrocardiogram)
- Einthoven Triangle
- Einthoven law

Draw and label normal ECG. What is the significance of various leads?

Q-6 Answer in short (any 5)

15

- a. Stomach emptying
- b. Functions of liver
- c. Migrating motor complex
- d. Bile salts and pigments
- e. Composition and functions of salivary secretion
- f. Stages of deglutition

Q-7 Write short notes on (any 3)

15

- a. Rigor mortis
- b. Myoproteins
- c. Na-K-ATPase pump
- d. Events at neuromuscular junction



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First MBBS Examination

January - 2021

Physiology Paper II

Time: 3 Hours]

[Total Marks: 100

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(1)

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Name of the Subject :

Physiology Paper II

Subject Code No.: 2006000101020002

Seat No.:

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- (5) Each question must be answered relevantly, precisely and to the point.

SECTION A

Q-1 Multiple choice question (no negative marking)

20

1. Most of the refraction occurs in the eye at
 - A. Anterior surface of cornea
 - B. Posterior surface of cornea
 - C. Anterior surface of lens
 - D. Anterior surface of lens

2. Rhodopsin

- A. is a purple pigment
- B. Absent in blind people
- C. Regenerated when the eyes are closed
- D. None of the above

3. Which sensation directly project to the cortex without relay in thalamus?

- A. Touch
- B. Taste
- C. Smell
- D. None of the above

4. Presbiopia is due to

- A. Loss of rods
- B. Changes in elasticity of lens
- C. Loss of transparency of the lens
- D. None of the above

5. Which one of the following not a superficial reflex

- A. Corneal reflex
- B. Planter reflex
- C. Abdominal reflex
- D. Jaw jerk

6. Which of the following amino acid is not neurotransmitter

- A. Tyrosine
- B. Glutamic acid
- C. GABA
- D. Aspartic acid

7. Repair of myelin sheath in CNS is dependent on function of

- A. Schwann cells
- B. Astrocytes
- C. Oligodendrites
- D. Microglial cells

8. Fibres linking the two hemisphere are known as

- A. Mossy fibres
- B. Commissural fibres
- C. Climbing fibres
- D. Association fibres

9. Which of the following is not extra pyramidal tract
- A. Reticulospinal tract
 - B. Corticospinal tract
 - C. Rubrospinal tract
 - D. Vestibulospinal tract
10. Pain arising from the viscera
- A. May be referred pain
 - B. May cause reflex contraction of nearby skeletal muscle
 - C. May cause reflex autonomic effect
 - D. All of the above
11. The meissner's corpuscles are sensitive to
- A. Temperature changes
 - B. Mechanical deformation
 - C. None of the above
 - D. A & B
12. Which of the following produces inhibin
- A. Leydig cells
 - B. Sertoli cells
 - C. Oocyte
 - D. Spermatocytes
13. Functions of the oxytocin
- A. Milk ejection
 - B. Induction of the labour
 - C. A & B
 - D. None of the above
14. Human spermatozoa normally
- A. Contain 23 chromosomes
 - B. Can survive in female genital tract for 1-2 days
 - C. Contain either X or Y chromosome
 - D. True for all of the above

15. ACTH is inhibited by

- A. ADH
- B. Angiotensin
- C. Cortisol
- D. Epinephrine

16. 17 hydroxy corticoids include

- A. Estradiol and progesterone
- B. Cortisol and cortisone
- C. Progesterone and aldosterone
- D. All of the above

17. Effect of insulin on protein metabolism

- A. Is anabolic
- B. occurs on liver
- C. is secondary to its effect on glucose
- D. true for all of the above

18. The following assess the thyroid functions except

- A. Basal metabolic rate
- B. Iodine uptake studies
- C. Plasma cholesterol
- D. Plasma glucose

19. Lower motor neuron disease is associated with

- A. wasting of affected muscle
- B. increase muscle tone
- C. increase reflex activity
- D. none of the above

20. Following are the important features of doctor patient relationship except
- A. Active listening
 - B. Privacy
 - C. Confidentiality
 - D. None of the above

SECTION B

- Q-2** Discuss the physiology of middle ear. Draw and label auditory pathway. 5+5
- Q-3** Answer in short (any 5) 15
- a. Broca's area
 - b. Types of sleep
 - c. Autonomic receptors
 - d. Wallerian degeneration
 - e. Basal metabolic rate
 - f. Classification of neurons
- Q-4** Write short notes on (any 3) 15
- a. Errors of refraction
 - b. Functions of cerebellum
 - c. Cerebrospinal fluid
 - d. Disorders of visual defects in relation to visual pathway

SECTION C

- Q-5** Discuss the physiological actions and regulation of secretion of male sex hormone. Describe the steps of spermatogenesis. 4+2+4

Q-6 Answer in short (any 5)

15

- a. Hypersecretion of growth hormone
- b. Ovulation
- c. Hormones of placenta
- d. Gonadotropin hormones
- e. Addison disease
- f. Diabetes mellitus

Q-7 Write short notes on (any 3)

15

- a. Physiological actions of parathormone
- b. contraception
- c. Physiological mechanism of accommodation
- d. Feedback mechanism



RAN - 2006000101030001

RAN-2006000101030001

1st MBBS Examination

January - 2021

Biochemistry -Paper-1

(New CBME Pattern)

સૂચના : / Instructions

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

1st MBBS

Name of the Subject :

Biochemistry -Paper-1 (New CBME Pattern)

Subject Code No.: 2006000101030001

Seat No.:

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Student's Signature

Section A: MCQ

(20 Marks)

Instructions:

- All questions are compulsory
- Each MCQ has only one correct answer
- One mark for correct answer. No negative marking
- If more than one answer is ticked, it will be treated as wrong answer
- Any tempering with answer will be treated as wrong answer
- Use only ball point black pen. Pencil is strictly prohibited
- Correct answer must be marked on OMR sheet with black pen & submit in first 30 minutes

- Which of the following is not a reducing sugar?
 - Lactose
 - Maltose
 - Sucrose
 - Fructose
- Spermatozoa in seminal fluid utilizes the following sugar for its metabolism
 - Galactose
 - Glucose
 - Fructose
 - Mannose

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- 3 Rancidity of butter is prevented by addition of
 - a) Vitamin D
 - b) Tocopherols
 - c) Biotin
 - d) Copper

- 4 Irreversible steps of Glycolysis are catalyzed by:
 - a) Hexokinase, Phosphofructokinase, Pyruvate Kinase
 - b) Glucokinase, Pyruvate Kinase, Glyceraldehyde 3 Phosphate Dehydrogenase
 - c) Hexokinase, Phospho Glycerate Kinase, Pyruvate Kinase
 - d) Pyruvate Kinase, Fructose 1,6 Bisphosphatase, Phosphofructokinase

- 5 Peripheral neuropathy occurs due to accumulation of which of the following sugar?
 - a) Sorbitol
 - b) Mannitol
 - c) Ribitol
 - d) Glycerol

- 6 Fatty acid oxidation does takes place in
 - a) Cytoplasm
 - b) Mitochondria
 - c) Golgi apparatus
 - d) Endoplasmic reticulum

- 7 Obesity generally reflects excess intake of energy and is often associated with the development of
 - a) Nervousness
 - b) Non-insulin dependent diabetes mellitus
 - c) Colon cancer
 - d) Mood elevation

- 8 Which of the following cytochrome is involved in biotransformation of xenobiotics?
 - a) Cytochrome c
 - b) Cytochrome b
 - c) Cytochrome P₄₅₀
 - d) Cytochrome al

- 9 SDA of food is highest for:
 - a) Carbohydrates
 - b) Fats
 - c) Iron
 - d) Proteins

- 10 Regarding HMP shunt all of the following are true, EXCEPT
 - a) Occurs in cytosol
 - b) No ATP produced
 - c) Active in adipose tissue, liver, lactating mammary gland, adrenal gland
 - d) Oxidative phase generates NADPH and non oxidative phase generates pyruvate

Which of the following dietary measure(s) is/are considered as 'cardioprotective'?

- Consuming large quantities of PUFA
- Restricting SFA to less than 10% of total calorie intake
- Adding more fiber to diet
- All of the above

Instructions : for section B & C:

- Use blue/black ball point pen only.
- The numbers to the right indicates full marks.
- Draw diagrams wherever necessary

Section B:

(40 Marks)

Q 2: Long Answer Questions (ANY TWO)

(2 × 10 = 20)

- Enumerate functions of Cholesterol. Describe the synthesis of cholesterol. Add a note on its regulation. What are other fate of acetyl CoA (2+4+2+2= 10) marks).
- What is gluconeogenesis? What is the importance of gluconeogenesis? Name the substrate used for gluconeogenesis. Describe the pathways of gluconeogenesis Name disease/condition in which gluconeogenesis is significantly enhanced (1+2+1+5+1 = 10 marks).
- Describe the dietary sources, absorption, daily requirement, biochemical functions and disorders of calcium metabolism. Add a note on regulation serum calcium level (1+2+1+2+1+3=10 marks).

Q 3: Brief Answer Questions (ANY TEN)

(10 × 2 = 20)

- Biochemical basis of respiratory distress syndrome in newborns.
- Define glycemic index and state its importance.
- What is glycated hemoglobin? Write its normal range and clinical significance.
- Lactose intolerance
- Biochemical basis of Wilson disease
- Lysosomes are called suicidal bags, justify.
- Functions of iron.
- Metabolic acidosis
- Describe the biomedical importance of dietary fibres
- Essential fatty acids: names, biochemical basis of essentiality, functions and deficiency manifestations,
- Write any two reactions of detoxification by conjugation.

Section C

Q 4: Short answer questions (ANY FOUR) (4 × 5 = 20)

- a) Discuss essential elements of communication in medical encounters. Construct a plan for effective patient-doctor communication (3+2 Marks).
- b) Classify phospholipids with example. Enumerate the functions of phospholipids. (2+3 Marks)
- c) Renal function tests
- d) Glycogen storage disorders.
- e) Harmful effects of free radicals on biomolecule and diseases associated with it.

Q 5: Clinical Cases (ALL COMPULSORY) (2 × 10 = 20)

Case 1:

15 year unconscious boy was brought by his parents in hospital. He had tachypnea (increase respiratory rate) & fruity smell from breath. Sign of dehydration was present. In blood investigation, his blood glucose level found 450 mg% and metabolic acidosis seen in ABG.

- a) What is a diagnostic criterion for diagnosis of DM based on plasma glucose concentration (WHO criteria)?
- b) What is reason for fruity smell in breath, tachypnea and dehydration?
- c) Why uncontrolled diabetes mellitus leads to ketosis?
- d) Write various causes of metabolic acidosis?
- e) Write acute and chronic complication of non insulin dependent Diabetes mellitus.

Case 2:

- 1) A 35 year old pregnant woman from poor family came with complain of weakness breathlessness and early fatigue. On examination she was pale; her Hb was 7.0 gm% and peripheral smear showed hypochromic microcytic RBCs.

- a) What are dietary sources of iron?
- b) Write RDA of Iron in adults.
- c) Enlist the factors affecting absorption of Iron. What is role of vitamin C in iron absorption?
- d) Functions of iron (any four).
- e) Iron is called one-way element. Explain.



RAN - 2006000101030002

RAN-2006000101030002

First MBBS (New) Examination

January - 2021

Biochemistry - Paper-2

(New CBME Pattern)

સૂચના : / Instructions

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નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

First MBBS (New)

Name of the Subject :

Biochemistry -Paper-2 (New CBME Pattern)

Subject Code No.: 2006000101030002

Seat No.:

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Student's Signature

Section A: MCQ (Separate paper attached)

(20 marks)

Instructions:

- All questions are compulsory
- Each MCQ has only one correct answer
- One mark for correct answer. No negative marking
- If more than one answer is ticked, it will be treated as wrong answer
- Any tempering with answer will be treated as wrong answer
- Use only ball point black pen. Pencil is strictly prohibited
- Correct answer must be marked on OMR sheet with black pen & submit in first 30 minutes

- A nucleoside can be composed of all of the following, EXCEPT
 - Purine base
 - Pentose sugar
 - Phosphate group
 - Pyrimidine base
- The two strands of DNA double helix are held together by:
 - Ionic bond
 - Hydrogen bond
 - Nonpolar covalent bond
 - Polar covalent bond

- 12 Which of the following protein(s) is/are acute phase protein(s)?
a) C-Reactive protein b) Fibrinogen
c) Haptoglobin d) All of the above
- 13 Formation of okazaki fragments occur in the process of:
a) Transcription b) Translation
c) Replication d) Reverse transcription
- 14 Reverse transcriptase catalyses:
a) Synthesis of RNA from DNA
b) Breakdown of RNA
c) Synthesis of DNA from RNA
d) Breakdown of DNA
- 15 The site to which RNA polymerase binds of the DNA template prior to the initiation of transcription
a) Intron/exon junction b) Promoter
c) Terminator d) Initiator methionine code
- 16 Which of the following causes frame shift mutation?
a) Transition b) Transversion
c) Deletion d) Substitution of purine to pyrimidine
- 17 Anticodons are present on:
a) Coding strand of DNA b) mRNA
c) tRNA d) tRNA
- 18 An operon is best described by:
a) A constitutively expressed gene system
b) An unregulated gene system
c) A coordinately regulated gene system
d) A gene that produces a monocistronic mRNA
- 19 A particular RNA in a mixture can be identified by:
a) Western blotting b) Eastern blotting
c) Northern blotting d) Southern blotting
- 20 Which of the following chromatographic techniques is based on molecular size?
a) Gel filtration chromatography
b) Ion exchange chromatography
c) Paper chromatography
d) Affinity chromatography

Instructions for section B & C:

1. Use blue/black ball point pen only.
2. The numbers to the right indicates full marks.
3. Draw diagrams wherever necessary

Section B:

Q 2: Long Answer Questions (ANY TWO OUT OF THREE) (2 × 10 = 20)

- a) Describe the Absorption, transport, food sources, RDA, biochemical functions, therapeutic use and deficiency manifestations of vitamin A.
- b) Describe transcription mechanism in prokaryotes and add a note on difference between prokaryotic and eukaryotic transcription.
- c) Describe in detail about different types of enzyme inhibitions with suitable examples.

Q 3: Brief Answer Questions (ANY TEN OUT OF ELEVEN) (10 × 2 = 20)

- a) Ubiquitin
- b) Differences between eukaryotic and prokaryotic ribosomes
- c) Deficiency manifestations of folic acid
- d) Denaturation of protein
- e) Pellagra like sign and symptoms are seen in Hartnup disease.
- f) Detoxification of ammonia
- g) Structure of t-RNA
- h) Persons with sickle cell trait are resistant to malaria caused by Plasmodium falciparum.
- i) Applications of recombinant DNA technology
- j) Oncogens and Oncogenes are different - Explain
- k) Biochemical basis of Alkaptonuria

Section C:

(40 Marks)

Q 4: Short answer questions (ANY FOUR OUT OF FIVE) (4 × 5 = 20)

- a) Mutation
- b) Post translational modifications
- c) Principle and applications of chromatography
- d) Gout
- e) Catabolism of heme

Q 5: Clinical Cases (ALL COMPULSORY) (2 × 10 = 20)

Case 1

A 7 year old male child was brought to the dental OPD with spongy, swollen gums which bled on touch. He was also suffering from pain and swelling in right knee. His diet contain mainly milk & Rice. No vegetables or Fruits were given to him. On investigation, the child was found to be anemic, it was microcytic hypochromic anemia.

1. Deficiency of which substance will produce these symptoms?
Name the condition
2. Explain the reason for bleeding gums and painful swollen joint
3. What is the cause of anemia in this case?
4. What are the dietary sources of vitamin C?
5. If excessive doses of vit C are given, can it produce toxic effects?
What is the recommended daily allowance of vitamin C?

Case 2

52 years old patient was admitted to the casualty department of hospital in a serious condition. He had become increasingly depressed after the death of his wife. His daughter found him in an unconscious state when she had come to see him in the morning. One and a half empty bottles of alcohol were found in the room. When the alcohol was examined for its contents it was found to be containing high amount of methanol. Doctors on duty diagnosed that it was a case of methanol intoxication and decided to start the intravenous infusion of ethanol

1. Which class of enzymes is required to metabolize alcohols?
2. Name the specific enzyme which acts on methanol
3. Why methanol is toxic?
4. Ethanol infusion is based on the principle of competitive inhibition. What is competitive inhibition?
5. In competitive inhibition K_m is increased but V_{max} is not affected. Explain