KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.
(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956)
Accredited 'A' Grade by NAAC (2nd Cycle) **Placed in 'A' Category by MHRD (GoI)**

MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

ANATOMY
PAPER – I

Q.P. Code: A001

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number **Marks**

1. M.C.Q. **20 X 1 = 20**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Describe parotid gland under the following headings:
   a) Capsules b) External features c) Structures piercing it d) Applied anatomy (2+4+2+2)

3. Describe the brachial plexus in detail. Add a note on its applied anatomy (8+2)

SHORT ESSAY QUESTIONS: **9 X 5 = 45**

4. Explain development of tongue and its congenital anomalies.
5. Describe the Bronchopulmonary segments of right lung.
6. Describe the interior of right atrium.
7. Describe the boundaries and contents of Digastric triangle.
8. Describe parts and fibers of the Internal capsule.
9. Explain the blood supply and lymphatic drainage of breast.
10. Explain the microscopic structure of thin skin.
11. Describe the types of synovial joints with examples.
12. A 50 year old woman presents with hoarseness of voice. She says that she had not been able to withstand cold climates and been feeling extremely dull, lethargic, and down. You notice that her face is bloated.
    a) What condition does the woman have?
    b) Which endocrine gland function is defective?
    c) Write the external features of that endocrine gland along with a diagram? (1+1+3)

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

13. Name the sinuses of pericardium.
14. List the derivatives of Neural crest cells.
15. Name the nuclei of cerebellum.
16. Draw diagram of microscopic structure of skeletal muscle.
17. Draw diagram of histology of medium size artery.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase-I, (CBME) March 2022**	**Max. Marks:**	**20 Marks**
Subject :	**Anatomy Paper-I, QP Code: A001**	**Time:**	**30 Minutes**

Instructions:

- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. The fibres that pass through the septomarginal trabecula
   (A) SA node (B) AV node
   (C) Left bundle branch of His (D) Right bundle branch of His

2. What is false about the opening for inferior venacava?
   (A) Lies at the level of T8 vertebra
   (B) It is highest of the three openings in diaphragm
   (C) It is almost always closed by the collapse of the walls of the vena venacava
   (D) It transmits right phrenic nerve

3. The smallest division of the mediastinum is the
   (A) Superior mediastinum (B) Anterior mediastinum
   (C) Middle mediastinum (D) Posterior mediastinum

4. Conductive tissue present in Triangle of Koch is
   (A) SA node (B) AV node
   (C) Bundle of His (D) Purkinje fibres

5. Which of the following structure is not related to the cavernous sinus?
   (A) Trochlear nerve (B) Oculomotor nerve
   (C) Optic nerve (D) Ophthalmic nerve

6. Supraorbital artery is a branch of artery
   (A) Maxillary (B) External carotid
   (C) Ophthalmic (D) Internal carotid

7. Where should the inferior thyroid artery be ligated during thyroidectomy?
   (A) Close to the gland (B) Away from the gland
   (C) Anterior and posterior branches separately (D) Anywhere in its course

8. Basilar sulcus is present on ventral surface of _____
   (A) Midbrain (B) Pons
   (C) Medulla oblongata (D) Cerebellum

9. Phylogenetically oldest part of the cerebellum is _____
   (A) Flocculonodular lobe (B) Only the vermis
   (C) Corpus cerebelli (D) Anterior lobe

10. Lateral cutaneous nerve of forearm is continuation of nerve
    (A) Radial (B) Musculocutaneous
    (C) Ulnar (D) Median

11. Paralysis of the serratus anterior muscle causes
    (A) Winging of scapula (B) Claw hand
    (C) Ape hand (D) Wrist drop

12. The bicipital groove of humerus lodges the
    (A) Axillary artery
    (B) Long head of biceps brachii
    (C) Long head of triceps
    (D) Coracobrachialis

13. The Meckel's cartilage forms all of the following structures **EXCEPT**
    (A) Malleus
    (B) Incus
    (C) Sphenomandibular ligament
    (D) Greater cornu of hyoid bone

14. The principal inductor in primary neural tube induction is
    (A) Hypoblast
    (B) Primitive streak
    (C) Extraembryonic mesoderm
    (D) Notochordal process

15. The side of the blastocyst to which inner cell mass is attached is called
    (A) Embryonic pole
    (B) Abembryonic pole
    (C) Prochordal plate
    (D) Primitive streak

16. The capsule of which of the following receptors is arranged in concentric layers that resembles an onion?
    (A) Tactile corpuscles of Meissner
    (B) Lamellated corpuscles of Pacini
    (C) Bulbous corpuscles of Krause
    (D) Ruffinis endings

17. Which of the following is a primary lymphoid organ?
    (A) Palatine tonsil
    (B) Spleen
    (C) Thymus
    (D) Lymph node

18. Localised thickening in the wall of splenic arteriole is
    (A) Penicilli
    (B) Ellipsoid
    (C) Ampulla
    (D) Sinusoid

19. Arrector pilorum is a:
    (A) skeletal muscle
    (B) Smooth musccle
    (C) Cardiac muscle
    (D) Unipinnate muscle

20. The coracoid process of scapula is an example of:
    (A) Traction epiphysis
    (B) Pressure epiphysis
    (C) Atavistic epiphysis
    (D) Aberrant epiphysis

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MBBS PHASE – I
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

ANATOMY
PAPER – I

Q.P. Code: 1001

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number **Marks**

1. M.C.Q. **25 X 1 = 25**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Describe the of right lung under the following headings: (4+4+2)
   a) external features b)Broncho pulmonary segments c) Applied Anatomy

3. Describe the shoulder joint under the following headings: (2+2+4+2)
   a) Articular surfaces b) Ligaments c) Movements d) Applied anatomy

SHORT ESSAY QUESTIONS: **8 X 5 = 40**

4. Describe the steps of spermatogenesis.
5. Mention the boundaries and contents of posterior mediastinum.
6. Describe the nerve supply and arterial supply of Scalp.
7. Describe the nerve supply of parotid gland.
8. Draw the labeled diagram of Circle of Willis with its branches.
9. Boundaries and contents of Cubital fossa.
10. Explain the microscopic structure of hyaline cartilage.
11. Describe the structure of neuron with a neat labelled diagram.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

12. Name the branches of arch of aorta.
13. Name the veins draining the heart.
14. Name the thenar muscles and their nerve supply.
15. Name the depravities of Septum transversum.
16. Name the hormones secreted by the anterior pituitary gland.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase-I, March 2022**	**Max. Marks:**	**25 Marks**
Subject :	**Anatomy Paper-I, QP Code: 1001**	**Time:**	**30 Minutes**

Instructions:

- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. Episternum is the name given to
   (A) Whole sternum (B) Manubrium
   (C) Corpus sterni (D) Xiphisternum

2. Anterior intercostal membrane is formed by the
   (A) External intercostal muscle (B) Internal intercostal muscle
   (C) Innermost intercostal muscle (D) Sternocostalis muscle

3. Myocardial infarction is
   (A) Necrosis of cardiac muscle (B) Necrosis of skeletal muscle
   (C) Necrosis of smooth muscle (D) None of the above

4. Pulmonary veins drain into
   (A) Left ventricle (B) Right ventricle
   (C) Right atrium (D) Left atrium

5. Right coronary artery arises from _____
   (A) Anterior aortic sinus (B) Left posterior aortic sinus
   (C) Right posterior aortic sinus (D) Ascending aorta

6. Part of lung aerated by a respiratory bronchiole is _____
   (A) A lobule (B) A segment
   (C) Alveolus (D) Pulmonary unit

7. Which one of the following joints is a primary cartilaginous joint?
   (A) Costovertebral (B) Costotransverse
   (C) First costochondral (D) Manubriosternal

8. Superior thyroid artery is a branch of
   (A) Internal carotid artery (B) External carotid artery
   (C) Thyrocervical trunk (D) Subclavian artery

9. Epiglottis is made up of ---------- cartilage
   (A) Hyline (B) Elastic
   (C) Fibrous (D) None of the above

10. All the following nerves emerge from the pontomedullary junction EXCEPT _____
    (A) Trigeminal (B) Abducent
    (C) Facial (D) Vestibulocochlear

11. The anterior wall of the third ventricle is formed by _____
    (A) Interthalamic connexus (B) Mammillary bodies
    (C) Lamina terminalis (D) Pineal body

12. The length of spinal cord in an adult male is ____ cm.
    (A) 35 (B) 40
    (C) 45 (D) 50

13. Carpal bone of the proximal row that does not take part in wrist joint is
    (A) Trapezius
    (B) Trapezoid
    (C) Capitate
    (D) Pisiform

14. Trapezius muscle is supplied by ---------- nerve
    (A) First cranial nerve
    (B) Cranial part 11th cranial nerve
    (C) Spinal part of 11^{th} cranial nerve
    (D) Twelfth cranial nerve

15. Claw hand is due to injury to which nerve?
    (A) Radial
    (B) Ulnar
    (C) Median
    (D) Anterior interosseous

16. Muscles derived from first arch are all **EXCEPT**
    (A) Mylohyoid
    (B) Tensor tympani
    (C) Tensor veli palatini
    (D) Stylohyoid

17. The head of spermatozoa is covered by
    (A) Basal body
    (B) Acrosomal cap
    (C) Axoneme
    (D) Annulus

18. The cavity of blastocyst is called
    (A) Blastocoel
    (B) Blastula
    (C) Blastomere
    (D) Blastpore

19. Urinary bladder is lined by _____ epithelium
    (A) Stratified squamous keratinized
    (B) Stratified squamous non-keratinized
    (C) Pseudostratified columnar
    (D) Transitional

20. Which of the following is a primary lymphoid organ?
    (A) Palatine tonsil
    (B) Spleen
    (C) Thymus
    (D) Lymph node

21. In the respiratory tract, the surfactant is secreted by _____ cells.
    (A) Goblet
    (B) Brush
    (C) Kulchitsky
    (D) Clara

22. Taste buds are absent in --- papillae
    (A) Circumvallate
    (B) Fungiform
    (C) Filiform
    (D) Foliate

23. The first bone to start ossification is:
    (A) Mandible
    (B) Femur
    (C) Clavicle
    (D) Humerus

24. The scapula is an example of :
    (A) Long bone
    (B) Flat bone
    (C) Irregular bone
    (D) Short bone

25. Cell lining of tunica intima is :
    (A) Cuboidal
    (B) Columnar
    (C) Squamous
    (D) Stratified squamous

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MBBS PHASE – I
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

ANATOMY
PAPER – II

Q.P. Code: 1002

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number		**Marks**
1.	M.C.Q.	**25 X 1 = 25**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Classify joints. Discuss the components of the synovial joints with examples. (4+6)

3. Describe the Popliteal fossa under following headings: (4+4+2)
   a) Boundaries b) Contents c) Applied anatomy.

SHORT ESSAY QUESTIONS: **8 X 5 = 40**

4. Discuss in brief about rotation of midgut with diagram.
5. Explain the blood supply and lymphatic drainage of stomach.
6. List the differences between small and large intestine.
7. Describe relations of right kidney with diagram.
8. Write a note on supports of the uterus.
9. Describe the boundaries and contents of femoral triangle.
10. Chromosome- structure and types.
11. Explain the microscopic structure of lung.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

12. Name the muscles attached to ischial tuberosity.
13. Mention movements of hip joint.
14. Name the parts of male urethra.
15. Name the ventral branches of abdominal aorta.
16. Draw diagram of microscopic structure of pancreas.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, March 2022**	**Max. Marks:**	**25 Marks**
Subject :	**Anatomy Paper II, QP Code: 1002**	**Time:**	**30 Minutes**

Instructions:

- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. The structure that continues from the canal of epididymis is
   (A) Ductus deferens (B) Seminal vesical
   (C) Ejaculatory duct (D) Prostatic urethra

2. Stomach bed is formed by following structures **EXCEPT**
   (A) Splenic artery (B) Transverse mesocolon
   (C) Right kidney (D) Anterior surface of pancreas

3. The inferior pancreaticoduodenal artery arises from
   (A) Superior mesentric artery (B) Inferior mesentric artery
   (C) Coeliac trunk (D) Hepatic artery

4. The ovarian artery is a branch of
   (A) Abdominal aorta (B) Uterine artery
   (C) Renal artery (D) Superior mesentric artery

5. Duodenal cap is normal finding in
   (A) Cholecystography (B) Barium meal
   (C) Pyelography (D) Barium enema

6. Fertilization takes place in which part of uterine tube
   (A) Infundibulum (B) Ampulla
   (C) Isthmus (D) Uterine

7. Zone of prostate are the following, **EXCEPT**
   (A) Peripheral zone (B) Central zone
   (C) Periurethral zone (D) Paraurethral zone

8. True ligaments of urinary bladder are all **EXCEPT**
   (A) Lateral puboprostatic (B) Medial puboprostatic
   (C) Median umbilical ligament (D) Median umbilical fold

9. Following are the parts of levator ani **EXCEPT**
   (A) Pubococcygeus (B) Iliococcygeus
   (C) Ischiococcygeus (D) External anal sphincter

10. The Duct of Santorini pertains to
    (A) Lung (B) Liver
    (C) Pancreas (D) Gall Bladdeer

11. Aortic opening in diaphragm is at ____ level
    (A) 8^{th} thoracic vertebra (B) 10^{th} thoracic vertebra
    (C) 12^{th} thoracic vertebra (D) 5^{th} thoracic vertebra

12. Herring bone pattern is observed in
    (A) Parotid duct (B) Accessory duct
    (C) Pancreatic duct (D) Inter lobular duct

13. Saphenous opening is an oval opening in the_____
(A) Superficial fatty layer (B) Deep membranous layer
(C) Deep fascia of the thigh (D) Iliotibial tract

14. Which of the following muscles is called 'peripheral heart'?
(A) Popliteal (B) Soleus
(C) Gastrocnemius (D) Tibialis posterior

15. Semitendinosus is _____muscle
(A) Hamstring (B) Extensor of knee
(C) Adductor of thigh (D) Short lateral rotator of thigh

16. Lymph node of Cloquet is present in_____
(A) Femoral ring (B) Adductor canal
(C) Popliteal fossa (D) Sole of the foot

17. Femoral vein is a continuation of _____vein
(A) Great saphenous (B) Small saphenous
(C) Popliteal (D) External iliac

18. Deltoid ligament stabilizes the _____ joint
(A) Hip (B) Knee
(C) Ankle (D) Superior tibiofibular

19. Chromaffin cells of adrenal medulla are derivatives of
(A) Neural crest cells (B) Primordial germ cells
(C) Mesenchymal cells (D) Primitive streak cells

20. Paramesonephric ducts are also called as
(A) Wolffian duct (B) Mullerian duct
(C) Wirsung's duct (D) Santorini's duct

21. Inguinal hernia is caused because of persistence of
(A) Processus vaginalis (B) Cryptorchidism
(C) Ectopic tesis (D) Mullerian ducts

22. Paneth cells are seen in
(A) Oesophagus (B) Stomuch
(C) Small Intestine (D) Colon

23. The prominent feature in a medium sized artery is_____
(A) Endothelium (B) Internal elastic lamina
(C) Tunica adventitia (D) Sub-endothelial connective tissue

24. Crossing over in meiosis occurs in
(A) Leptotene (B) Pachytene
(C) Diplotene (D) Diakinesis

25. Following is true for Down's syndrome
(A) Trisomy 21 (B) Trisomy 18
(C) 47,XXY (D) Trisomy X

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

ANATOMY
PAPER – II

Q.P. Code: A002

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number **Marks**

1. M.C.Q. **20 X 1 = 20**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Describe the Inguinal Canal under the following headings: a) Boundaries b) Contents and c) Applied anatomy (6+2+2)
3. Describe the knee joint under the following headings: a) Articular surfaces b) Ligaments c) Movements d) Applied anatomy. (2+2+4+2)

SHORT ESSAY QUESTIONS: **9 X 5 = 45**

4. Discuss in brief about rotation of midgut with diagram
5. Describe the attachments and contents of Lesser omentum
6. List the differences between small and large intestine
7. Describe the boundaries and contents of Ischiorectal fossa
8. Describe the boundaries and contents of femoral triangle
9. Klinefelter's syndrome
10. Explain the microscopic structure of duodenum
11. Explain the microscopic structure of urinary bladder
12. A 22-year-old male patient presented with a 3-day history of abdominal pain, diarrhoea, nausea and vomiting. He reported abdominal distention of a couple of weeks Duration. Initial examination showed abdominal distention and blood tests indicated eosinophilia. An abdominal CT scan showed mild ascites.
    a. What is the most dependent part of peritoneal cavity during sitting and supine position?
    b. Describe the peritoneal folds seen in male and female pelvic cavity. (2+3)

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

13. Mention the boundaries and contents of Calot's triangle.
14. List the contents of Broad ligament.
15. Mention the causes of polycystic kidney.
16. Enumerate derivatives of Hindgut.
17. Draw diagram of microscopic structure of pancreas.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, (CBME) March 2022**	**Max. Marks:**	**20 Marks**
Subject :	**Anatomy Paper II, QP Code: A002**	**Time:**	**30 Minutes**

Instructions:

- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. The bilaminar peritoneal fold between stomach and diaphragm is
   (A) Greater omentum (B) Lesser omentum
   (C) Gastro-phrenic ligament (D) Gastro-splenic ligament

2. The most dependent area of the peritoneal cavity in supine position is
   (A) Hepato renal pouch of Morrison (B) Recto-vesical pouch
   (C) Recto-uterine pouch of Douglas (D) Utero-vesical pouch

3. The structure that continues from the canal of epididymis is
   (A) Ductus deferens (B) Seminal vesical
   (C) Ejaculatory duct (D) Prostatic urethra

4. Inferior rectal artery is a branch of _____artery.
   (A) Internal iliac (B) Inferior mesenteric
   (C) Internal pudendal (D) Superior mesenteric

5. Rupture of penile part of urethra leads to collection of urine in the
   (A) Superficial perineal space (B) Deep perineal space
   (C) Pelvic cavity (D) All of the above

6. Important cardinal features of large intestine absent in rectum are_____
   (A) Sacculations (B) Appendices epiploicae
   (C) Tenia coli (D) All of the above

7. Saphenous opening is an oval opening in the _____
   (A) Superficial fatty layer (B) Deep membranous layer
   (C) Deep fascia of the thigh (D) Iliotibial tract

8. Evertor of the foot is ------ muscle
   (A) Tibialis anterior (B) Tibialis posterior
   (C) Peroneus longus (D) Extensor halluces longus

9. Deltoid ligament is
   (A) Medial collateral ligament of ankle joint (B) Lateral collateral ligament of ankle joint
   (C) Medial collateral ligament of knee joint (D) Lateral collateral ligament of knee joint

10. Action of dorsal interossei _____
    (A) Adduction (B) Flexion
    (C) Extension (D) Abduction

11. Derivatives of Post arterial segment of Midgut are all the following **EXCEPT**
    (A) Terminal ileum (B) Caecum and appendix
    (C) Colon up till right two thirds of transverse colon (D) Jejunum

12. Trigone of urinary bladder is developed from absorption of
    (A) Mesonephric ducts (B) Paramesonephric ducts
    (C) Ductus arteriosus (D) Ductus venosus

13. Appendix of ovary is a remnant of
    (A) Mullerian duct (B) Wolffian duct
    (C) Santorini's duct (D) Wirsung's duct

14. Inguinal hernia is caused because of persistence of
    (A) Processus vaginalis (B) Cryptorchidism
    (C) Ectopic tesis (D) Mullerian ducts

15. Paneth cells are seen in
    (A) Oesophagus (B) Stomuch
    (C) Small Intestine (D) Colon

16. The prominent feature in a medium sized artery is _____
    (A) Endothelium (B) Internal elastic lamina
    (C) Tunica adventitia (D) Sub-endothelial connective tissue

17. Meissener's plexus is seen in which of the following layer of gastrointestinal tract?
    (A) Mucosa (B) Submucosa
    (C) Muscularis externa (D) Serosa

18. The phagocytic cells lining the blood sinusoids of liver are called _____ cells
    (A) Kupffer (B) Stave
    (C) Ito (D) Lacis

19. Turner's syndrome is also referred to as
    (A) Trisomy 21 (B) X monosomy
    (C) D trisomy (D) Polysomy X

20. Cri-du-chat syndrome results from deletion of the short arm of
    (A) Chromosome 5 (B) Chromosome 13
    (C) Chromosome 18 (D) Chromosome 4

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

PHYSIOLOGY
PAPER – I

Q.P. Code: A003

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number **Marks**

1. M.C.Q. **20 X 1 = 20**

LONG ESSAY QUESTIONS: 2 X 10 = 20

2. Define hemostasis. Describe the Clotting mechanisms. Add a note on Hemophilia. (2+6+2)
3. Describe the chemical control of respiration. Add a note on Cheynes Stokes breathing

SHORT ESSAY QUESTIONS: 9 X 5 = 45

4. Define Homeostasis. Explain positive feedback mechanism with one example
5. CASE -HISTORY; A 25-year-old woman with a history of sickle cell disease (SCD) presents to the clinic for follow-up after a hospitalization for a vaso-occlusive pain crisis. She has a history of an acute ischemic stroke at age 5 years and has received monthly, simple red cell transfusions since the stroke. Her last transfusion was approximately four months prior. Laboratory results show the following: a) Hemoglobin 7.5 g/dl b) Hematocrit 24% c) Leukocyte count 9,300/mm^3 d) Platelet count 202,000/m^3 e) Mean corpuscular volume 105 fl
   f) Hemoglobin electrophoresis 92% HbS, 6% HbF, 2% HbA2 7. Ferritin 1,300 ng/ml
   a) What is Sickle cell disease
   b) Why do the haemoglobin molecules crystalize & what is the outcome in this case
   c) Is this disorder genetically inherited & if so how?
   d) What is sickle cell trait ? (1+2+1+1)
6. Define with normal value of Ventilation Perfusion Ration. Describe its significance.
7. Describe second stage of deglutition. Mention about Achalasia cardia. (3+2)
8. Explain the formation and functions of bile salts. (3+2)
9. Explain Cystometrogram.
10. Explain Tubular maximum for glucose.
11. Describe the regulation of blood pressure by Renin Angiotensin mechanism.
12. Describe nervous regulation of blood pressure.

SHORT ANSWER QUESTIONS: 5 X 3 = 15

13. Explain functions of plasma proteins.
14. Draw a neat labeled diagram of Oxyhaemoglobin dissociation curve.
15. Describe the Entero hepatic circulation.
16. List the Diuretics with their sites of action.
17. Define Einthoven's law.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) March 2022**	**Max. Marks:**	**20 Marks**
Subject :	**Physiology Paper I, QP Code: A003**	**Time:**	**30 Minutes**

Instructions:
- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. Normal cell volume and pressure depends upon
   (A) Gibbs- Donnan effect
   (B) Operation of Na-K pump
   (C) Asymmetrical distribution of ions across cell membrane
   (D) Presence of more osmotically active particles in the cell

2. Which is not true about second messengers
   (A) Mediate intracellular responses to many hormones
   (B) Generally activate protein kinases
   (C) Are substances that interact with first messengers outside cell
   (D) Are intracellular mediators

3. All of the following examples of the 3 major elements contribute to body mass **EXCEPT**
   (A) Carbon (B) Oxygen
   (C) Sodium (D) Hydrogen

4. Platelets are formed from
   (A) Normoblast (B) Myelocyte
   (C) Reticulocyte (D) Megakaryocyte

5. The B lymphocytes provide the principle defense mechanism by producing
   (A) Antigens (B) Collagen
   (C) Immunoglobulins (D) Interferons

6. Which of the blood cells derangement is implicated in purpura
   (A) WBC (B) RBC
   (C) Platelets (D) Reticulocytes

7. The decrease in affinity of hemoglobin for oxygen due to increase in P CO_2 is known as
   (A) Haldane's effect (B) Bohr's effect
   (C) Hamburger phenomenon (D) Chloride shift

8. Respiratory centers are located in
   (A) Pons (B) Midbrain
   (C) Pons and medulla (D) Cerebellum

9. Terminal bronchioles are
   (A) Gas exchange zones (B) Gas conducting zones
   (C) Anatomical dead space zone (D) Physiological dead space zone

10. Fetal hemoglobin shifts the
    (A) Oxygen dissociation curve to the right (B) Oxygen dissociation curve to the left
    (C) No change in Oxygen dissociation curve (D) Is hyperbolic in shape

11. Deficiency of myentric plexus at the level of lower esophageal sphincter results in this clinical condition
    (A) Achalasia cardia (B) Hirschsprung disease
    (C) Paralytic ileus (D) Dumping syndrome

12. Bicarbonate ions from the parietal cells are discharged into plasma in exchange of
(A) Sodium (B) Calcium
(C) Chloride (D) Potassium

13. Which has the highest pH
(A) CSF (B) Pancreatic juice
(C) Intestinal juice (D) Bladder bile

14. Maximum glucose reabsorption occurs in the
(A) Proximal Tubule (B) Thin descending limb of loop of Henle
(C) Thin ascending limb of loop Henle (D) Distal convoluted tubule

15. In the absence of vasopressin, the greatest fraction of filtered water is absorbed in the
(A) Proximal Tubule (B) Loop of Henle
(C) Distal tubule (D) Cortical collecting duct

16. Stimulation of parasympathetic nerve causes
(A) Automatic bladder (B) Atonic bladder
(C) Emptying of bladder (D) Filling of bladder

17. A wave in the jugular venous pulse is due to
(A) Atrial systole (B) Ventricular systole
(C) Atrial diastole (D) Ventricular diastole

18. A decrease in the velocity of impulse conduction through the AV node will cause :
(A) The PR interval to increase (B) The PR interval to decrease
(C) Disappearance of T wave (D) Increased heart rate

19. Vascular distensibility is least for the following segment
(A) Pulmonary artery (B) Pulmonary vein
(C) Systemic artery (D) Systemic vein

20. The component of systemic blood pressure which undergoes much less fluctuation is:
(A) Systolic BP (B) Pulse pressure
(C) Mean blood pressure (D) Diastolic BP

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

PHYSIOLOGY
PAPER – II

Q.P. Code: A004

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number		**Marks**
1.	M.C.Q.	**20 X 1 = 20**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Describe the auditory pathway and its peculiarities. (8+2)
3. Discuss the molecular basis of skeletal muscle contraction. Add a note on Myasthenia Gravis. (7+3)

SHORT ESSAY QUESTIONS: **9 X 5 = 45**

4. Explain the role of Second messengers for hormonal actions.
5. Discuss the actions of Insulin.
6. A patient by name Rahul 20 years old, came with his parents to the casualty with the complains of enlargement of the hands & feet, he also complained of gynecomastia. On examination patient had kyphosis, protruding of mandible, hepatomegaly & splenomegaly. Blood pressure was raised. Investigations showed blood glucose of 240mg/dl & growth hormone levels of 15ng/ml in the blood. Questions
   a) What is the diagnosis?
   b) What is the etiology of the above condition?
   c) What are the other clinical features?
   d) What is the treatment? (1+1+2+1)
7. Explain phases and regulation of endometrial cycle.
8. Describe the functions of testosterone.
9. Describe the pathway of taste sensation.
10. Draw a diagram illustrating functional divisions of the Cerebellum. List the functions of Cerebellum.
11. Describe the properties of sensory receptors.
12. Explain the Brown Sequard Syndrome.

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

13. List the clinical features of Addison's disease.
14. List family planning methods.
15. Define presbyopia, its cause and physiological basis of treatment
16. Papez circuit- Explain components and functions.
17. Explain factors affecting nerve conduction.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, (CBME) March 2022**	**Max. Marks:**	**20 Marks**
Subject :	**Physiology Paper II, QP Code: A004**	**Time:**	**30 Minutes**

Instructions:
- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. Blood Testis Barrier in human beings is derived from
   (A) Leydig Cells (B) Sertoli Cells
   (C) Germinal Cells (D) Tunica Albuginea

2. Main action of Inhibin is
   (A) Inhibits secretion of prolactin (B) Stimulates secretion of TSH
   (C) Inhibits secretion of FSH (D) Stimulates synthesis of oestradiol

3. Elasticity of cervical mucosa is seen in
   (A) Proliferative stage (B) Luteal stage
   (C) Ovulation (D) Menstruation

4. Auditory acuity can be measured by
   (A) Use of human voice (B) Tuning fork tests
   (C) Audiometry (D) Watch test

5. The auditory receptors are present on
   (A) Basilar membrane (B) Reissner's membrane
   (C) Tectorial membrane (D) Secondary tympanic membrane

6. Visual acuity is greatest in the retinal fovea because of
   (A) Only rods (B) Only cones
   (C) Both rods and cones (D) No rods and cones

7. Aqueous humor differ from plasma in that it is_____
   (A) High in protein (B) High content of vitamin C & NaCl
   (C) High Glucose (D) Low lactic acid

8. In its action in cells, aldosterone
   (A) Increases transport of Epithelium sodium channels from the cytoplasm to the cell membrane
   (B) Binds to a receptor in the nucleus
   (C) Does not act on the cell membrane
   (D) May activate a heat shock protein

9. Pineal gland secretes
   (A) Thyroid stimulating hormone (B) Follicle stimulating hormone
   (C) Melatonin (D) Prolactin

10. Factor stimulating the secretion of growth hormone
    (A) Decreased blood glucose (B) Increased blood glucose
    (C) Increased blood free fatty acids (D) Somatomedins

11. Non-osmotic stimulation for ADH secretion is:
    (A) Uremia
    (B) Hyperglycemia
    (C) Hemorrhage
    (D) Excessive water ingestion

12. Prolactin inhibiting hormone is
    (A) Somatostatin
    (B) Dopamine
    (C) Inhibin
    (D) Oxytocin

13. Alpha waves in EEG are recorded when the person is:
    (A) Awake and eyes closed
    (B) In deep sleep
    (C) Under stress
    (D) Awake and eyes opened

14. Major area for language comprehension in cerebral cortex is known as:
    (A) Broca's area
    (B) Wernicke's area
    (C) Exner's area
    (D) Dejerine area

15. Blood brain barrier is made up of:
    (A) Microglia
    (B) Oligodendrites
    (C) Astrocytes
    (D) Small neurons

16. Mid-collicular lesion in an experimental animal produces:
    (A) Spinal rigidity
    (B) Thalamic syndrome
    (C) Decerebrate rigidity
    (D) Decorticate rigidity

17. If a sharp pointed object touches the foot of a person, the foot is immediately withdrawn from the object involuntarily. This action involves the receptors:
    (A) Free nerve endings
    (B) Meissner's corpuscles
    (C) Pacinian corpuscles
    (D) Ruffini end organs

18. Initiation of nerve impulse occurs at axon hillock because:
    (A) It has a lower threshold than the rest of the axon
    (B) It is unmyelinated
    (C) Neurotransmitter release occurs here
    (D) None of the above

19. A patient complains of muscle weakness which disappears on administration of neostigmine. Its mechanism of action is
    (A) It blocks the action of acetylcholine
    (B) It interferes with the action of acetylcholine esterase
    (C) It interferes with action of amine oxidase
    (D) It interferes with the action of carbonic anhydrase

20. The cross bridges in muscle sarcomere are part of
    (A) Actin molecule
    (B) Troponin molecule
    (C) Myosin molecule
    (D) Tropomyosin molecule

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

BIOCHEMISTRY
PAPER-I

Q.P. Code: A005

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number **Marks**

1. M.C.Q. **20 X 1 = 20**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Name the Ketone bodies? How are they formed in the body? Describe the role of Ketone bodies in starvation and in severe uncontrolled Diabetes mellitus. (1+6+3)

3. Mention the four structural organization of protein. Describe in detail the two common secondary structures. Add a note on denaturation. (1+6+3)

SHORT ESSAY QUESTIONS: **9 X 5 = 45**

4. Describe allosteric regulation of enzymes with an example.
5. Describe the enzyme profile in myocardial infarction.
6. Describe digestion and absorption of carbohydrates.
7. Explain the regulation of glycogenesis and glycogenolysis.
8. Explain amphibolic role of citric acid cycle.
9. What is fatty liver? Explain the causes for fatty liver. Mention the lipotropic factors. (1+2+2)
10. Describe the inborn errors associated with sulphur containing amino acids.
11. List the limiting amino acids and explain mutual supplementation of proteins (2+3)
12. A fair chubby boy of 5 years age was brought to the hospital with the complaint that he has mental retardation. Blood chemistry revealed that serum phenylalanine was abnormally high. What is the probable diagnosis? Name the screening test useful in this case. Explain how early diagnosis will be helpful?

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

13. What are Ligand-gated channels? Give example.
14. What are isoenzymes? Give **two** examples.
15. Explain Cori cycle?
16. Mention any THREE biologically important peptides.
17. Trans fatty acids- Sources and adverse effects. (1.5+1.5)

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) March 2022**	**Max. Marks:**	**20 Marks**
Subject :	**Biochemistry Paper-I, QP Code: A005**	**Time:**	**30 Minutes**

Instructions:
- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. Insulin dependent glucose transporter is
   (A) GLUT-1 (B) GLUT-2
   (C) GLUT-3 (D) GLUT-4

2. Cystic fibrosis results from defective ion channels for:
   (A) Na (Sodium) (B) Cl (Chloride)
   (C) Ca (Calcium) (D) H(Hydrogen)

3. Regarding Km value all the following are true **EXCEPT**
   (A) Signature of the Enzyme (B) Represents strength of ES complex
   (C) Depends on enzyme concentration (D) Denotes affinity of the enzyme for substrate

4. The following enzyme is an example for "Suicide" enzyme inhibition
   (A) Lipoxygenase (B) Xanthine Oxidase
   (C) Thromboxane synthase (D) 5 ' nucleotidase

5. The coenzyme is
   (A) Often a metal (B) Always a protein
   (C) Often a vitamin derivative (D) Always an inorganic compound

6. Rapaport- Leubering cycle is associated with the synthesis of
   (A) 1,3 bisphosphoglycerate (B) 2,3 bisphosphoglycerate
   (C) Phosphoenol pyruvate (D) Glyceraldehyde 3- phosphate

7. Deficiency of the following enzyme causes hereditary fructose intolerance
   (A) Aldolase A (B) Aldolase B
   (C) Fructokinase (D) Glycerol kinase

8. In erythrocytes, the end product of glycolysis is
   (A) Pyruvate (B) Acetyl CoA
   (C) Lactate (D) 2,3 Bisphosphoglycerate

9. The precursor of arachidonic acid is
   (A) Oleic (B) Linoleic acid
   (C) Stearic acid (D) Linolenic acid

10. The nitrogenous base present in surfactant is
    (A) Choline (B) Ethanolamine
    (C) Serine (D) Inositol

11. Conversion of Acetyl-CoA to Malonyl- CoA requires the enzyme:
    (A) Acetyl-CoA carboxylase (B) Pyruvate carboxylase
    (C) Acetyl transacylase (D) Acyl CoA-synthetase

12. Triacylglycerol-rich lipoproteins
    (A) Chylomicrons (B) VLDL
    (C) LDL (D) HDL

13. The lipoprotein with the fastest electrophoretic mobility is
    (A) Chylomicron (B) VLDL
    (C) IDL (D) HDL

14. Respiratory quotient of Proteins is about
    (A) 0.7 (B) 0.8
    (C) 0.9 (D) 1

15. Calorific value (Energy density) of Proteins is
    (A) 4 kcal/g (B) 4.8 kcal/g
    (C) 5.4 kcal/g (D) 5.8 kcal/g

16. Quaternary structure is present in
    (A) Myoglobin (B) Insulin
    (C) Haemoglobin (D) Alkaline Phosphatase

17. Casein, the milk protein is an example of
    (A) Nucleoprotein (B) Chromoprotein
    (C) Phosphoprotein (D) Lipoprotein

18. Non protein amino acid is
    (A) Proline (B) Histidine
    (C) Ornithine (D) Alanine

19. Which of the following amino acid is exclusively ketogenic?
    (A) Leucine (B) Phenylalanine
    (C) Threonine (D) Isoleucine

20. Glycine is used for synthesis of the following, **EXCEPT**:
    (A) Heme (B) Serotonin
    (C) Purine (D) Creatinine

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MBBS PHASE – I
(CBME)

DEGREE EXAMINATION – MARCH 2022

Time: 3 Hours **Max. Marks: 100**

BIOCHEMISTRY
PAPER-II

Q.P. Code: A006

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number **Marks**

1. M.C.Q. **20 X 1 = 20**

LONG ESSAY QUESTIONS: **2 X 10 = 20**

2. Outline the principles of DNA replication in eukaryotes. Add a note on DNA repair mechanism. (7+3)
3. Describe the sources, biomechanical functions, requirements and deficiency manifestations of Niacin.

SHORT ESSAY QUESTIONS: **9 X 5 = 45**

4. What are the Salient features of Genetic code?
5. Discuss the Detoxification by Conjugation reactions with two examples (2.5+2.5)
6. Discuss the role of Vitamin E and Vitamin C as antioxidant vitamins (2.5+2.5)
7. Describe the functions of Vitamin A
8. Define oxidative phosphorylation. Explain the chemiosmotic theory. (1+4)
9. Explain the renal and respiratory regulation of body pH
10. Describe the sources, RDA, absoption, transport and uptake of iodine by the thyroid gland in the body.
11. Explain the reactions of Catabolism (Degradation) of heme and mention its fate
12. A 55-year-old male, known chronic alcoholic was admitted to hospital with distension of the abdomen and yellowish discoloration of sclera. The following are some of the biochemical findings in the patient. Serum bilirubin: 10 mg% , Conjugated: 5.5 mg%, Unconjugated: 4.5 mg%, Serum alkaline phosphatase: 140 IU/L AST (SGOT): 260 IU/L ALT (SGPT): 290 IU/L, Urine Bile pigments: ++, Bile salts: +, Urobilinogen: + .
    What is your probable diagnosis? What are the important findings helping you to rule out other type of Jaundice .

SHORT ANSWER QUESTIONS: **5 X 3 = 15**

13. Explain salvage pathway.
14. Write a note on fluorosis.
15. What is the biochemical defect and clinical features in Wilson's disease.
16. Mention the gene defect and clinical features of Ehlers-Danlos syndrome (EDS)
17. Enumerate the professional qualities and roles of a physician.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) March 2022**	**Max. Marks:**	**20 Marks**
Subject :	**Biochemistry Paper-II, QP Code: A006**	**Time:**	**30 Minutes**

Instructions:
- Each question is followed by four options.
- Pick up the single best option and darken the appropriate circle in the OMR Sheet provided.
- Each question carries one mark. No negative marking.

1. Mutation in which there is substitution of an adenine base by guanine in DNA is known as
   (A) Transposition (B) Transition
   (C) Transversion (D) Frameshift

2. The following enzyme is used as a molecular scissor in recombinant DNA technology
   (A) Restriction endonuclease (B) RNA Polymerase
   (C) DNA Polymerase (D) Topoisomerase

3. Lac operon in E Coli is an example of
   (A) Positively regulated operon (B) Inducible operon
   (C) Repressible operon (D) All of these

4. The separation of parental DNA strands during replication is carried out by the following enzyme
   (A) DNA synthase (B) DNA helicase
   (C) DNA polymerase (D) DNA ligase

5. Vitamin synthesized by bacteria in the intestine is
   (A) A (B) C
   (C) D (D) K

6. Vitamin B_1 coenzyme (Thiamine Pyro Phosphate) is involved in
   (A) Oxidative decarboxylation (B) Hydroxylation
   (C) Transamination (D) Carboxylation

7. Metal that is present in Vitamin B_{12} is
   (A) Copper (B) Cobalt
   (C) Iron (D) Zinc

8. Vitamin deficiency which develops in people eating only maize as staple diet is:
   (A) Riboflavin (B) Cobalamin
   (C) Niacin (D) Thiamine

9. Vitamin involved in one-Carbon metabolism is:
   (A) Folic acid (B) Thiamine
   (C) Pyridoxine (D) Niacin

10. Which of the following is **NOT TRUE** regarding vitamin K
    (A) Water soluble vitamin (B) Synthesized by intestinal bacteria
    (C) Deficiency causes hemorrhagic disease of newborn (D) Good sources are green leafy vegetables, cabbage

11. Respitratory acidosis can occur in
    (A) Hysterical hyperventilation (B) Bronchial asthma
    (C) Renal diseases (D) Loss of intestinal fluids

12. A healthy man weighing 70 kgs , has maximum water content in :
    (A) Extracellular fluid (B) Intracellular fluid
    (C) Plasma (D) Interstilial fluid

13. The transport form of Iron is
    (A) Transferrin (B) Hepcidin
    (C) Hemosedirin (D) Ferritin

14. The four subunits of Hemoglobin are held together by :
    (A) Hydrogen bonds (B) Hydrophobic interactions
    (C) Van der waals forces (D) All of the above

15. The following is the normal hemoglobin derivative found in blood.
    (A) Carboxy-hemoglobin (B) Reduced-hemoglobin
    (C) Sulf-hemoglobin (D) Cyanmethemoglobin

16. Urea clearance is affected by
    (A) Age (B) Diet
    (C) Exercise (D) All of the above

17. Regarding iodide uptake in thyroid function tests, all are true **EXCEPT**
    (A) Regulated by TSH (B) Along concentration gradient
    (C) ATP dependent process (D) Targeted by anti-thyroid drugs

18. Marfan's syndrome results from a mutation in the gene coding
    (A) Collagen (B) Elastin
    (C) Fibrillin (D) Keratin

19. Activation of protooncogenes to oncogenes involves
    (A) Promoter insertion mechanism (B) Chromosomal translocation
    (C) Point mutation (D) All of the above

20. The inability to distinguish between self cells and non self cells leads to
    (A) Hypersensitivity (B) Autoimmune disorders
    (C) Immunodeficiency (D) Self Tolerance

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