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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – APRIL 2023

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. Explain the Thyroid gland under the following headings: (2 + 4 + 2 + 2)
   a) Capsules **b)** External features **c)** Blood supply **d)** Applied anatomy
3. Describe the first carpometacarpal joint under the following headings (2 + 2 + 4 + 2)
   a) Articular surfaces **b)** Ligaments **c)** Movements **d)** Applied anatomy

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

4. Explain development of tongue and its congenital anomalies.
5. Mention the boundaries and contents of Posterior Mediastinum.
6. Describe the Bronchopulmonary segments of right lung.
7. Describe the interior of Right Atrium.
8. Describe the Sulci and Gyri of superolateral surface of Cerebrum.
9. Describe the boundaries and contents of cubital fossa.
10. Explain the microscopic structure of Hyaline cartilage.
11. Enumerate the types of epiphyses with examples.
12. A man of about 30 years comes to OPD with the inability to close his left eye, tears overflowing on the left cheek and saliva dribbling from his left angle of mouth (1+1+3)
    a) What is the reason for his condition?
    b) Which nerve is damaged?
    c)Name all the branches of the nerve involved.

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

13. Name the axial skeleton bones.
14. Mention the three shunts in fetal circulation.
15. Name the contents of Carotid sheath.
16. Name the nuclei of cerebellum.
17. Draw a neat labeled diagram of microscopic structure cardiac muscle.

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase-I, (CBME) April 2023**	**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. Counting of ribs can be done at the level of
   (A) Sternal angle (B) Suprasternal notch
   (C) Xiphisternal joint (D) Body of the sternum

2. The depressed central part of diaphragm between the domes, called central tendon lies at the level of
   (A) Xiphisternal joint (B) Lower end of xiphoid
   (C) T7 vertebra (D) T10 vertebra

3. Carina corresponds to
   (A) Trachial bifurcation (B) Division of pulmonary artery
   (C) beginning of trachea (D) All of the above

4. All of the following are the features of interior of right atrium **EXCEPT**
   (A) Crista terminals (B) Fossa ovalis
   (C) Musculi pectinati (D) Moderator band

5. The lower border of Falx cerebri encloses which sinus?
   (A) Superior sagital (B) Inferior sagital
   (C) Straight (D) Occipital

6. The bone forming the roof of the middle ear cavity is
   (A) Arcuate eminence (B) Tegmen tympani
   (C) Tympanic plate (D) Tympano mastoid sheath

7. Nasolacrimal duct opens into
   (A) Inferior meatus (B) Vestibule of nose
   (C) Middle meatus (D) Superior meatus

8. Facial colliculus in the floor of fourth ventricle is caused due to underlying
   (A) Facial nucleus (B) Abducent nucleus
   (C) Cochlear nuclei (D) Vestibular nuclei

9. Trapezius muscle is supplied by which nerve?
   (A) First cranial nerve. (B) Cranial part of 11th cranial nerve.
   (C) Spinal part of 11th cranial nerve (D) Twelfth cranial nerve.

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

11. The surgical neck of humerus is related to which nerve?
    (A) Radial (B) Axillary
    (C) Ulnar (D) Median

12. 16 celled stage of cleavage is called a
    (A) Blastocyst (B) Morulla
    (C) Zygote (D) Graafian follicle

13. Stapedius is a muscle of which arch?
    (A) First (B) Second
    (C) Third (D) Fourth

14. Which of the following divides into diencephalon & telencephalon?
    (A) Prosencephalon (B) Mesencephalon
    (C) Rhombencephalon (D) Metencephalon

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

16. Which cells in the respiratory tract secrete surfactant?
    (A) Goblet (B) Brush
    (C) Kulchitsky (D) Clara

17. Sebaceous glands are example for which glands?
    (A) Apocrine (B) Merocrine
    (C) Holocrine (D) Heterocrine

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

19. Myelin sheath in the peripheral nerves is formed by
    (A) Astrocytes (B) Microglia
    (C) Oligodendrocytes (D) Schwann cells

20. A patient had a sensory and motor loss in the contralateral side of the head. Which part of internal capsule is involved
    (A) Posterior limb (B) Anterior limb
    (C) Genu (D) Sublentiform part

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – APRIL 2023

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 right kidney under the following headings: external features, coverings and relations. Add a note on its applied anatomy. (4 + 2 + 2 + 2)
3. Describe the knee joint under the following headings: a) Ligaments b) Bursae around knee joint c) Menisci d) Movements. (3 +3 + 2 + 2)

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

4. Describe the development of pancreas and its congenital anomalies.
5. Describe the formation and sites of Porta- caval anastomoses.
6. Describe the origin, insertion, nerve supply and action of hamstring muscles.
7. Write a note on Medial longitudinal arch of foot.
8. Explain the microscopic structure of liver.
9. Explain the microscopic structure of testis.
10. A 56-year-old man presented to us with a 6 hours history of non-reducible tender lump in his right groin. His groin was explored urgently and was found to have an omental band adhesion causing closed loop small bowel obstruction with gangrene within the hernial sac in the inguinal canal with a wide internal inguinal ring. Gangrenous small bowel was resected and primary anastomosis was performed through the same inguinal incision. a)Name the boundaries of Hassal Bach's triangle? b)What is medial and lateral direct inguinal hernias? (3+2)
11. Describe Karyotyping
12. Describe the boundaries and recesses of Ischiorectal fossa.

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

13. Enumerate the structures passing through lesser sciatic foramen.
14. Name the contents of adductor canal.
15. Mention the boundaries and contents of Calot's triangle.
16. Mention the complications of persistent vitellointestinal duct.
17. Draw diagram of microscopic structure of ovary.

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, (CBME) April 2023**	**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 second commonest position of vermiform appendix is
   (A) Pre-ileal (B) Pelvic
   (C) Mid-inguinal (D) Retrocaecal

2. Mac Burney's point lies at the junction of ----------on an imaginary line between the umblilicus and anterior superior iliac spine
   (A) Medial 2/3 and lateral 1/3 on the left side (B) Medial 2/3 and lateral 1/3 on right side
   (C) Medial 1/3 and lateral2/3 on left side (D) Medial 1/3 and lateral 2/3 on right side

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

4. Uterine artery is the branch of
   (A) Abdominal aorta (B) External iliac artery
   (C) Internal iliac artery (D) Ovarian artery

5. At what level is Vena caval opening in Diaphragm?
   (A) 8th thoracic vertebra (B) 10th thoracic vertebra
   (C) 12th thoracic vertebra (D) 5th thoracic vertebra

6. Umblicus is supplied by which spinal segment
   (A) T4 (B) T6
   (C) T8 (D) T10

7. Unlocking muscle of knee joint is
   (A) Popliteus (B) Soleus
   (C) Gastrocnemius (D) Plantaris

8. 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

9. Dorsi flexor of the ankle joint is
   (A) Tibialis anterior (B) Tibialis posterior
   (C) Peroneous longus (D) Peroneous brevis

10. Baker's cyst related to
    (A) Femoral triangle (B) Femoral canal
    (C) Adductor canal (D) Popliteal fossa

11. The development of metanephric blastema is induced by
    (A) Pronephric duct (B) Mesonehphric tubules
    (C) Allantois (D) Ureteric bud

12. Urachus forms the following remnant
    (A) Mesonephric duct
    (B) Median Umbilical ligament
    (C) Medial umbilical ligament
    (D) Meckel's Diverticulum

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

14. Hydrocele is caused because of persistence of
    (A) Processus vaginalis
    (B) cryptorchidism
    (C) Ectopic tesis
    (D) Mullarian ducts

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

16. In liver, the space of Disse is a space
    (A) Around the central vein
    (B) Around the portal triad
    (C) In between the hepatocytes
    (D) Between sinusoids and hepatocytes

17. Centroacinar cells are seen in
    (A) Pancreas
    (B) Liver
    (C) Parotid gland
    (D) Pituitary gland

18. Juxtaglomerular cells are the modified smooth muscle cells in tunica media of
    (A) Afferent arteriole
    (B) Glomerulus
    (C) Efferent arteriole
    (D) Loop of Henle

19. Chromosome classification is called
    (A) Denver classification
    (B) Robert classification
    (C) Colorado classification
    (D) Denovo classification

20. The karyotype 45,XO is seen in
    (A) Edward syndrome
    (B) Downs syndrome
    (C) Turner syndrome
    (D) Patau syndrome

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – APRIL 2023

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 Hemophillia. (2+6+2)
3. Name the muscles of respiration. Describe the mechanism of respiration. Add a note on physiological basis of Infant respiratory distress syndrome.

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

4. Define Homeostasis. Explain positive feedback mechanism with one example.
5. Describe pathophysiology and features of Erythroblastosis foetalis.
6. A 55 year old obese female, came to the emergency room early in the morning with severe chest pain radiating to the left arm which was associated with severe sweating. She also had a bout of vomiting. On examination: blood pressure 80/50 mmHg, Pulse 110 bpm, low volume Electrocardiogram (ECG): ST segment elevation and T wave inversion a)What is the probable diagnosis? b)Define ST segment. Which part of the cardiac muscle action potential does it correspond to? c) What is the physiological basis for changes in BP and pulse rate in the above case? (1+2+2)
7. Describe Baroreceptor reflexes.
8. Describe neural regulation of respiration.
9. Describe micturition reflex and add a note on deafferentation of the bladder.
10. Define GFR and describe the factors determining glomerular filtration.
11. Describe the mechanism of secretion of gastric juice add a note on peptic ulcer.
12. Describe the movements of intestine during interdigestive and digestive phase.

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

13. Explain functions of plasma proteins.
14. List changes in acclimatization to high altitude.
15. Describe the Entero hepatic circulation.
16. Describe the physiological basis of artificial kidney.
17. What is phasic coronary blood flow? Mention its clinical implication.

****

MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) April 2023**	**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. The composition of intracellular fluid mainly differs from that of extracellular fluid as it has
   (A) Higher osmolality. (B) Higher K^+ concentration
   (C) Higher Na^+ concentration (D) Lower H^+ ion concentration

2. Normal osmolarity of blood is
   (A) 50 milliosm/L (B) 400 milliosm/L
   (C) 290 milliosm/L (D) 1200 milliosm/L

3. Cell shape and mobility are provided by the following
   (A) smooth muscle (B) Nucleus
   (C) Ribosomes (D) Cytoskeleton

4. The most common type of anemia found in our country is
   (A) Thalassemia (B) Aplastic Anemia
   (C) Vitamin B_{12} deficiency anemia (D) Iron deficiency anemia

5. In humans, ABO blood group agglutinogens first appear
   (A) during 6th week of fetal life (B) Immediately after birth
   (C) At the end of 1 year of life (D) at the end of 10 year of life

6. A 20 year old subject complains of generalized weakness & fatigue. On clinical examination there was yellowish discolouration of skin & conjunctiva. His bilirubin levels were 2mg% & was diagnosed with haemolytic jaundice. Vanden Bergh reaction would be
   (A) Indirect +ve (B) Direct +ve
   (C) Indirect negative & direct positive (D) Biphasic reaction

7. In adults, normal anatomical dead space is
   (A) 350ml (B) 500ml
   (C) 150ml (D) 900ml

8. The cause for hyaline membrane disease is
   (A) Deficiency of tubular myelin (B) Deficiency of surfactant
   (C) Increased ventilation perfusion ratio (D) Decreased ventilation perfusion ratio

9. Hyperventilation causes the following condition
   (A) Hypocapnia (B) Hypercapnia
   (C) Hypoxia (D) Oxygen toxicity

10. Decompression sickness occurs when person
    (A) Dives 100 meters deep in sea (B) Ascends slowly in steps to sea level
    (C) Unable to come to sea level at all (D) Ascends rapidly to sea level

11. Pancreatic secretion includes
    (A) Enterokinase (B) Chymotrypsin
    (C) Renin (D) Gastrin

12. Motilin hormone
    (A) Inhibits GIT motility
    (B) Increases Ileal blood flow
    (C) Decreases GIT motility
    (D) Regulates Intestinal motility during inter- digestive phase

13. The principle function of the Lower Oesophageal sphincter is
    (A) To allow stomach acid into the Oesophagus
    (B) To maintain food in Oesophagus for digestion.
    (C) To prevent reflux of the stomach contents.
    (D) Oesophageal peristalsis.

14. The osmolarity of the Glomerular filtrate in the PCT is
    (A) Hypoosmolar
    (B) Hyperosmolar
    (C) Isoosmolar
    (D) None of the above

15. Normal glomerular filtration rate in adults is
    (A) 100 ml / min
    (B) 125 ml / min
    (C) 150 ml / min
    (D) 175 ml / min

16. Renin is secreted by these cells
    (A) Proximal tubular
    (B) Juxtaglomerular
    (C) Macula densa
    (D) Glomerular

17. Isometric contraction period of ventricles is associated with
    (A) P wave of ECG
    (B) Closed AV valves & semilunar valves
    (C) Maximum ventricular ejection
    (D) Second heart sound

18. The PR interval in an ECG is measured from
    (A) Beginning of P wave to the end of R wave
    (B) Beginning of P wave to the beginning of QRS complex
    (C) End of P wave to the beginning of QRS complex
    (D) End of P wave to the end of QRS complex

19. Windkessel effect is seen in this type of blood vessels
    (A) Larger arteries
    (B) Larger veins
    (C) Arterioles
    (D) Capillaries

20. Korotkoff's sounds are produced due to _____blood flow
    (A) Turbulent
    (B) Laminar
    (C) Cessation
    (D) Decreased

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – APRIL 2023

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 functions and regulation of secretion of Thyroxine. Explain the manifestations of Cretinism. (7+3)
3. Describe the origin, course, termination and functions of dorsal column tract with a neat-labeled diagram. Add a note on Brown Sequard Syndrome. [1+3+1+2+3]

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

4. List the different methods of Family Planning. Explain the physiological basis of Oral Contraceptives.
5. Explain role of hormones in lactation.
6. Define and explain stages of Spermatogenesis. Explain factors affecting Spermatogenesis.
7. Describe the refractive errors of the eye with correction.
8. Describe the Olfactory pathway. Add a note on applied physiology.
9. Draw a diagram illustrating functional divisions of the Cerebellum. List the functions of Cerebellum.
10. With the help of a neat diagram, describe the cortical areas concerned with speech.
11. A 19-year old man hyper extended his neck in a car accident. On examination, it was found that he couldn't move any of his limbs, nor could he feel any sensation in his trunk and limbs. Also, all the reflexes were absent. Diagnosis of spinal cord injury was done. After a month he could move his shoulders to some extent, but the four limbs remained paralyzed and he developed increased muscle tone and hyperactive stretch reflexes in both arms and legs. Also, Babinski sign is present bilaterally. He had to be catheterized to drain urinary bladder. a) In your opinion, what is the extent of spinal cord injury and at which level the injury occurred? b) Why is the patient unable to move his limbs and why he lost all sensations? c) After one month, what is the cause of hyperactive stretch reflexes? d) Explain what happens to autonomic reflexes during stage of reflex activity. (1+1+1+2)
12. Describe the Biphasic action potential with the help of diagram.

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

13. Differentiate between Gigantism and Acromegaly.
14. Explain cause and features of Precocious Puberty.
15. List the functions of semicircular canals
16. Define Renshaw cell inhibition. Explain its mechanism.
17. Define and explain Motor Unit.

****

MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, (CBME) April 2023**	**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. In the fetal testis , testosterone is secreted by
   (A) Leydig cells (B) Sertoli cells
   (C) Stromal cells (D) Germinal epithelial cells

2. How many weeks of pregnancy are maintained by Corpus Luteum
   (A) 8 (B) 12
   (C) 20 (D) 28

3. Mechanism of action of contraceptive piils
   (A) By inhibiting ovulation (B) By increasing motility of fallopian tubes
   (C) Decreasing motility of sperms (D) Blocks entry of sperm in fallopian tubes

4. Bending of the hairs away from kinocilium results in
   (A) Depolarization (B) Hyperpolarization
   (C) Repolarization (D) No change

5. Light sensitivity is highest in
   (A) Rods (B) Cones with cyanolabe
   (C) Cones with chlorolabe (D) Cones with erythrolabe

6. In conductive deafness
   (A) Both AC and BC are decreased (B) AC > BC
   (C) Both AC and BC are absent (D) BC > AC

7. The papillae that is arranged in a V shape on the back of the tongue is
   (A) Fungiform papillae (B) Circumvallate papillae
   (C) Foliate papillae (D) Filiform papillae

8. Hypotonic volume expansion of plasma results in a decrease secretion of
   (A) Aldosterone (B) Renin
   (C) Glomerular filtration rate (D) Antidiuretic hormone

9. Insulin increases the entry of glucose into
   (A) Renal tubular cells (B) Neurons in the cerebral cortex
   (C) Skeletal muscle (D) Mucosa of the small intestine

10. Reverse T3 is
    (A) Secretion from T4 having no hormonal action (B) Secreted from T4 having hormonal action
    (C) Principal hormone secreted by thyroid (D) More active than T3

11. Positive feedback mechanism operates in case of
    (A) Oxytocin (B) Cortisol
    (C) Thyroxine (D) Parathormone

12. A young woman has puffy skin and a hoarse voice. Her plasma TSH concentration is low but increases markedly when she is given TRH. She probably has
    (A) Hyperthyroidism due to a thyroid tumor
    (B) Hypothyroidism due to primary abnormality in the thyroid gland
    (C) Hypothyroidism due to a primary abnormality in the pituitary gland
    (D) Hypothyroidism due to a primary abnormality in the hypothalamus

13. Decerebrate rigidity can be produced experimentally, by a lesion at
    (A) Mid-collicular level
    (B) Cerebral cortex
    (C) Medulla
    (D) Cerebellum

14. Sleep spindles are seen in which stage of sleep
    (A) REM
    (B) NREM-I
    (C) NREM-II
    (D) NREM-III

15. Crossed extensor reflex is mediated at the level of
    (A) Spinal cord
    (B) Medulla
    (C) Cerebellum
    (D) Cerebral cortex

16. Features of the upper motor neuron lesion are the following **EXCEPT**
    (A) Rigidity in the muscle
    (B) Loss of superficial reflexes
    (C) Exaggerated deep reflexes
    (D) Loss of deep reflexes

17. The area for language comprehension in the cerebral cortex lies in the
    (A) Post parietal cortex
    (B) Wernickes area
    (C) Occipital lobe
    (D) Prefrontal association areas

18. All are true regarding of Sarcomere during muscle contraction **EXCEPT**
    (A) A- band remains unchanged
    (B) H-zone disappears
    (C) I- band becomes wider
    (D) Two Z-lines come closer

19. Myasthenia gravis is treated effectively by using
    (A) Acetylcholine receptor blockers
    (B) Acetylcholinesterases
    (C) Acetylcholinesterase inhibitors
    (D) Dopamine

20. Rheobase indicates
    (A) Magnitude of current
    (B) Rate of discharge
    (C) Velocity of nerve conduction
    (D) Specificity of impulse transmission

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – APRIL 2023

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. Mention the normal Cholesterol levels in Plasma . Explain how cholesterol is transported from liver to peripheral tissue and back. (1+5+4)
3. Describe the reactions and disorders of urea cycle. Mention the significance of urea cycle. (5+4+1)

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

4. Explain in a graph competitive inhibition mentioning the effect on Km and Vmax . Give one example.
5. Explain the importance of serum enzyme levels in liver disorders.
6. What are the indications for oral glucose tolerance test (OGTT)? Explain the procedure.
7. Explain anaplerotic reactions of Krebs cycle.
8. Explain the digestion and absorption of Lipids. Add a note on Steatorrhea
9. What is active methionine? Give four examples for transmethylation reactions.
10. Describe the biosynthesis of melanin. Add a note on disorder of melanin synthesis.
11. Discuss any five factors that affect Nitrogen balance in the body.
12. A six month old infant which appeared apparently normal at birth was brought to the hospital with failure to thrive along with complaints of vomiting and diarrhea, on examination there was jaundice, hepatomegaly and cataract. Tests on the baby's urine were positive for reducing sugar but negative for glucose. What is the probable diagnosis? Mention the enzyme defect. Explain the mechanism for development of cataract in this case.

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

13. What are Ionophores? Mention the different types.
14. What is glucose-alanine cycle?
15. Define glucogenic and ketogenic amino acids. List one example for each.
16. List THREE biologically important compounds derived from Tryptophan metabolism.
17. Limiting amino acids- Definition and Examples.

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) April 2023**	**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. The cell organelle which breaks intracellular debris is
   (A) Lysosome (B) Ribosomes
   (C) Golgi complex (D) Mitochondria

2. In erythrocyte, glucose transport is an example of
   (A) Simple diffusion (B) Active transport
   (C) Facilitated diffusion (D) Ion driven active transport

3. The following enzyme shows flipped pattern of Isoenzymes in Myocardial Infarction
   (A) Lactate dehydrogenase (B) Creatine kinase
   (C) Alkaline phosphatase (D) Aspartate Transaminase

4. In competitive enzyme inhibition
   (A) Km is increased (B) Km is decreased
   (C) Vmax is increased (D) Vmax is decreased

5. Serum lipase level increases in
   (A) Pagets disease (B) Gaucher's disease
   (C) Acute pancreatitis (D) Myocardial Infarction

6. The enzyme of the glycolysis pathway inhibited by fluoride ions is
   (A) Hexokinase (B) Aldolase
   (C) Enolase (D) Pyruvate kinase

7. Muscle does not release glucose to the blood stream as it LACKS the enzyme
   (A) Glucose 1 phosphatase (B) Fructose 6 phosphatase
   (C) Glucose 6 phosphatase (D) Phosphoglucomutase

8. Dehydrogenase enzymes of the hexose monophosphate shunt are
   (A) NAD+ specific (B) NADP+ specific
   (C) FAD specific (D) FMN specific

9. The defect in muscle glycogen phosphorylase causes
   (A) Cori's disease(type III) (B) Mc Ardle's disease(type V)
   (C) Pompe's disease(type II) (D) Anderson's disease (type IV)

10. Lipoprotein responsible for the transport of dietary lipids is
    (A) Chylomicrons (B) High-density lipoprotein
    (C) Intermediate density lipoprotein (D) Low-density lipoprotein

11. Activation of fatty acid for -oxidation is by
    (A) Carboxylase
    (B) Thiokinase
    (C) Thiolase
    (D) Hydratase

12. Bile salts help in absorption of dietary lipids by
    (A) Producing the micellar state of lipids
    (B) Incorporation of cholesterol into chylomicron
    (C) Converting triglyceride to 2- monoacyl glycerol
    (D) Providing optimum pH for lipase activity

13. The apolipoprotein which acts as ligand for LDL receptor is
    (A) B-48
    (B) B-100
    (C) A-II
    (D) C-II

14. Limiting amino acid in Wheat is
    (A) Leucine
    (B) Lysine
    (C) Cysteine
    (D) Methionine

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. During denaturation of protein which of the following bonds is **NOT** disrupted
    (A) Hydrogen
    (B) Hydrophobic
    (C) Sulphide
    (D) Peptide

17. The pH at which the molecule acts as zwitterion is called as
    (A) Isoelectric pH
    (B) Isoelectric focussing
    (C) Optimum pH
    (D) Neutral pH

18. The methyl donor in methyl transfer reaction is
    (A) Methyl cobalamin
    (B) Methyl malonyl -CoA
    (C) S-adenosyl methionine
    (D) S-adenosyl homocysteine

19. S-adenosyl methionine transfers methyl groups to which compound
    (A) Homocysteine
    (B) Methionine
    (C) Homoserine
    (D) Nor epinephrine

20. Which amino acid will give rise to a vitamin
    (A) Tyrosine
    (B) Tryptophan
    (C) Glutamic acid
    (D) Histidine

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MBBS PHASE – I
(CBME)

DEGREE EXAMINATION – APRIL 2023

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. Discuss in detail about the steps of transcription. Add a note on post transcriptional modification of mRNA. (7+3)
3. What is the normal pH of blood? Discuss the mechanisms involved in its regulation. (1+9)

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

4. What is mutation? Explain types of mutations with examples.
5. Define free radical. Mention the free radical scavenger enzyme systems. Substantiate their clinical significance.
6. Define detoxification. Describe the different phases of detoxification with suitable examples.
7. Describe the functions of Vitamin D.
8. What is anion gap? What are the causes for normal anion gap acidosis and high anion gap acidosis?
9. Discuss the regulation of sodium and water balance.
10. Explain the reactions of Catabolism (Degradation) of heme.
11. Enumerate liver function tests. Describe in detail any **TWO** of them with clinical significance.
12. A 40 year old male presented with severe pain, redness and swelling of the base of the first metatarsophalangeal joint in the night. On examination, he had mild fever of 38.2^{0} C. The right big toe was swollen, warm, red and exquisitely tender. Serum uric acid was 9.7mg/dl. (1+2+2)
    a). What is the likely condition ?
    b). Mention the causes for the above condition.
    c). Explain the rationale behind administration of Allopurinol in the treatment.

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

13. Mention any **THREE** salient features of genetic code.
14. What is Hypokalemia? Give the causes for the same.
15. Mention **THREE** disorders associated with Protein targeting.
16. With a neat labeled diagram explain the basic structure of Immunoglobulin.
17. Describe the duties of doctors in patient care.

****

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 (3rd Cycle) **Placed in 'A' Category by MoE (GoI)**

MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) April 2023**	**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. DNA replication occurs during the following phase of cell cycle
   (A) M phase (B) S phase
   (C) Gap 1 phase (D) Gap 2 phase

2. Failure of post-translational modifications of Collagen occurs in deficiency of
   (A) Ascorbic acid (B) Retinol
   (C) Thiamine (D) Calcitriol

3. The enzyme catalysing the peptide bond formation during translation is
   (A) Aminoacyl tRNA synthetase (B) Protease
   (C) Peptidyl transferase (D) Translocase

4. Xeroderma pigmentosa occurs due to defect in
   (A) Mismatch repair (B) Base excision repair
   (C) Nucleotide excision repair (D) Double strand break repair

5. All of the following are detoxifying agents, **EXCEPT**
   (A) Glycine (B) Glutathione
   (C) Glucuronic acid (D) Glycogen

6. All of the following are free radicals **EXCEPT**
   (A) Hydrogen sulphide (B) Nitric oxide
   (C) Superoxide anion (D) Peroxy nitrite

7. Organ involved in Vitamin D activation is
   (A) Retina (B) Kidney
   (C) Bone (D) Intestines

8. Which of the following vitamins acts as a coenzyme for transfer of one Carbon units?
   (A) Niacin (B) Thiamine
   (C) Riboflavin (D) Folic acid

9. Homocystinuria can be due to deficiency of the following vitamin
   (A) B_1 (B) B_2
   (C) B_5 (D) B_{12}

10. Which of the following is considered as the final acceptor of electrons in respiratory chain?
    (A) Coenzyme Q (B) Cytochrome C
    (C) Cytochrome A (D) Molecular Oxygen

11. Metabolic acidosis is primarily due to
    (A) Increase in Carbonic acid (B) Decrease in Carbonic acid
    (C) Decrease in Bicarbonate (D) Increase in Bicarbonate

12. The predominant cation of the extracellular fluid (ECF) is
    (A) Sodium (B) Potassium
    (C) Calcium (D) Magnesium

13. The major storage form of Iron is
    (A) Transferrin (B) Ceruloplasmin
    (C) Ferritin (D) Hemosedirin

14. What is expected out of Vanden Bergh reaction in hepatic jaundice?
    (A) Direct Positive (B) Indirect Positive
    (C) Biphasic (D) None of the above

15. Which of the following molecules is an end product of heme degradation ?
    (A) Uroprophyrinogen (B) Coproporphyrinogen
    (C) Protoporphyrinogen (D) Urobilinogen

16. The serum level of the following enzyme is elevated in obstructive jaundice
    (A) Pancreatic Lipase (B) Creatine Kinase
    (C) Alkaline phosphatase (D) Both A and B

17. Which of the following renal function tests are used to assess glomerular function?
    (A) Clearance tests (B) Urine concentration tests
    (C) Urine dilution tests (D) Urine acidification tests

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. Newborns get their antibodies from mothers milk. This is an example of
    (A) Naturally acquired active immunity (B) Naturally acquired passive immunity
    (C) Artificially acquired active immunity (D) Artificially acquired passive immunity

****