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 – FEBRUARY 2021

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 the right lung under the following headings
   a) External features b) Broncho pulmonary segments c) Applied Anatomy
   (4+4+2)
3. Describe the scalp under following headings:
   a) Layers b) Blood supply c) Nerve supply d) Applied Anatomy
   (4+2+2+2)

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

4. Explain the development of right atrium
5. Describe the blood supply of heart in brief
6. Describe the relations and tributaries of thoracic duct
7. Describe the muscles of the soft palate
8. Describe the boundaries and features of Rhomboid fossa
9. Attachments and relations of flexor retinaculum of wrist
10. Explain the Microscopic structure of thymus.
11. Enumerate the types of epiphyses with examples
12. A 33-year–old woman presented to the clinic with complaints of coughing, hoarseness of voice, a 'tightening and lump' sensation in the throat for approximately four to five months, and generalized weakness. The patient also complained of a 5 Kg weight loss over a six month period.
    a. What is the most likely diagnosis?
    b. Write the relations of thyroid gland along with the diagram

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

13. Name the veins draining the heart
14. Mention the changes of spermatogenesis
15. Draw diagram of Reflex arc
16. Name the parts of mid brain
17. Draw diagram of microscopic structure of sarcomere

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase-I, (CBME) February 2021**	**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. Posterior intercostal arteries for lower 9 intercostal spaces are branches of
   (A) Abdominal aorta (B) Descending thoracic aorta
   (C) Arch of aorta (D) Ascending aorta

2. Cardiac dominance is decided by artery
   (A) Anterior interventricular (B) Posterior interventricular
   (C) Circumflex (D) Conus

3. All the following are subdivisions of inferior mediastinum **EXCEPT**
   (A) Anterior (B) Middle
   (C) Superior (D) Posterior

4. Which of the following arteries are enlarged in coarctation of aorta?
   (A) Subclavian (B) Internal mammary
   (C) Posterior intercostals (D) Anterior intercostals

5. Auditory tube opens into
   (A) Nasopharynx (B) Oropharynx
   (C) Laryngopharynx (D) Lateral wall of the nose

6. Safety muscle of the tongue is _____
   (A) Palatoglossus (B) Styloglossus
   (C) Genioglossus (D) Chondroglossus

7. Which of the following lemniscus carries the fibres of auditory pathway?
   (A) Lateral (B) Medial
   (C) Spinal (D) Trigeminal

8. Inferior cerebellar peduncle of the cerebellum connects the cerebellum with
   (A) Midbrain (B) Pons
   (C) Medulla oblongata (D) Spinal cord

9. In Klumpke's palsy, the deformity is called as
   (A) Claw hand (B) Ape hand
   (C) Wrist drop (D) Policeman's tip hand

10. The median nerve supplies all the following muscles EXCEPT
    (A) Flexor carpi ulnaris (B) Flexor carpi radialis
    (C) Flexor digitorum superficialis (D) Pronator teres

11. The supra scapular nerve is a branch of of brachial plexus
    (A) Roots (B) Upper trunk
    (C) Middletrunk (D) Posterior cord

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

13. All the following are structures derived from the cartilage of second arch **EXCEPT**
(A) Stapes
(B) Styloid process
(C) Lesser cornu of hyoid bone
(D) Greater cornu of hyoid bone

14. Melanocytes are seen in which layer of skin?
(A) Stratum lucidum
(B) Stratum corneum
(C) Stratum granulosum
(D) Stratum basale

15. Cellular reticulum is seen in
(A) Spleen
(B) Thymus
(C) Tonsil
(D) Lymph node

16. Pars intermedius secretes
(A) TSH
(B) FH
(C) ACTH
(D) MSH

17. The first bone to start ossify:
(A) Mandible
(B) Femur
(C) Clavicle
(D) Humerus

18. Primary center of ossification appears in:
(A) Epiphysis
(B) Metaphysis
(C) Diaphysis
(D) Epiphyseal plate

19. Which of the following arteries are filled mainly during diastole?
(A) Common carotid arteries
(B) Hepatic arteries
(C) Coronary arteries
(D) Renal arteries

20. A collection of nerve cell body outside the CNS is called :
(A) Tract
(B) Nerve
(C) Ganglion
(D) Nucleus

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – FEBRUARY 2021

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 uterus under the following headings:
   a) Parts b) Position c) Relations d) Supports (2+2+3+3)

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

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

4. Describe the development and descent of testis
5. Name the ligaments and blood supply of spleen
6. Describe the formation and sites of Portacaval anastomosis
7. Describe the boundaries and contents of deep perineal pouch
8. Superficial Inguinal group of lymph nodes and their drainage area
9. Describe Mutation
10. Explain the microscopic structure of large intestine
11. Explain the microscopic structure of Adrenal gland
12. A 35-year old man suddenly felt a sharp pain in his right groin. Later, he noticed that a painful bulge which disappeared when he layed on his back. After several months, the pain and the bulge in his groin increased. On examination, the physician observed a swelling which began about midway between the anterior superior Iliac spine and the midline, progressed medially for about 4 cm, and then turned toward the Scrotum.
    a) What is inguinal hernia?
    b) What are the different types of Inguinal hernia? (2+3)

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

13. Describe anteflexion and anteversion of uterus
14. Name the contents of greater omentum.
15. Mention the features of Situs Inversus
16. Describe the development of pancreas
17. Draw diagram of microscopic structure of ovary.

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, (CBME) February 2021**	**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. Pitt cells are present in
   (A) Spleen (B) Liver
   (C) Pancreas (D) Stomach

2. The atypical lumbar vertebra is the
   (A) 5th lumbar (B) 1st lumbar
   (C) 3rd lumbar (D) Variable

3. Deep perineal pouch
   (A) Lies superior to the perineal membrane (B) Lies superficial to perineal membrane
   (C) Lies at the sides of perineal membrane (D) Has no relation to perineal membrane

4. Vesical venous plexus drains in to_____vein.
   (A) External Iliac (B) Internal Iliac
   (C) Common Iliac (D) Internal pudendal

5. Narrowest and least dilatable part of male urethra is.
   (A) Pre–prostatic (B) Prostatic
   (C) Membranous (D) Penile

6. Pelvic inlet in males is _____
   (A) Oval shaped (B) Heart shaped
   (C) Flat (D) Round shaped

7. Which of the following artery is not a branch of femoral artery?
   (A) Profounda femoris (B) Superficial circumflex iliac
   (C) Descending genicular (D) Obturator

8. Which of the following is also known as Hunter's canal?
   (A) Adductor canal (B) Femoral canal
   (C) Femoral triangle (D) Femoral sheath

9. Peroneus brevis muscle is inserted on
   (A) Base of 5th meta tarsal bone (B) 1st meta tarsal bone
   (C) Tuberosity of navicular bone (D) Cuboid bone

10. All of the following bones take part in formation of lateral longitudinal arch **EXCEPT**
    (A) Calcaneum (B) Cuboid
    (C) Navicular (D) 4th metatarsal

11. Uterine tubes are derived from _____
    (A) Mesonephric duct (B) Paramesonephric duct
    (C) Ureteric bud (D) Primitive urethrae

12. Derivatives of hindgut are all the following **EXCEPT**
    (A) Descending colon (B) Sigmoid colon
    (C) Left one third of transverse colon (D) Proctodeum below anal membrane

13. Prostatic Utricle in male is a remnant of
(A) Mesonephric duct (B) Paramesonephric duct
(C) Ejaculatory duct (D) Ductus deferens

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

15. The central structure seen in renal lobule
(A) Cortical arch (B) Interlobular artery
(C) Arcuate artery (D) Medullary ray

16. C– cells of thyroid gland secretes
(A) Paratharmone (B) Thyrocalcitonin
(C) T3 & T4 (D) TSH

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

18. The oocyte surrounded by single layer of flat follicular cells is called_____
(A) Primordial (B) Primary
(C) Secondary (D) Graafian

19. Down's syndrome is an example of
(A) Monosomy (B) Trisomy
(C) Triploidy (D) Polyploidy

20. The number of characters investigated by Mendel was
(A) Four (B) Seven
(C) Six (D) One

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – FEBRUARY 2021

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 Erythropoiesis? Describe the stages and factors affecting erythropoiesis (1+6+3)

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 negative feedback mechanism with one example.
5. Classify the leucocytes. Describe the role of microphages in body defence mechanism
6. Mr. Santhosh a 45 year old male patient is rushed to casualty who is short of breath gasping for air and audible wheezing on expiration. Patient complains of annoying cough with persistent chest tightness and stated he coughed thick white mucus, had similar symptoms several years ago. Patient has been a 2 packs a day smoker for the past 20 years. Onexamination RR is increased PFT done shows VC 4.0 L and FEV 2.3 L FRC 1.5 L RV 700ml.
   a) What is the probable disorder and enlist 3 causes for the same
   b) Define VC and FEV1 and calculate FEV1%
   c) Explain the significance of FRC
   d) Mention the methods used to measure FRC and explain any one method
7. Explain the factors affecting gastric emptying
8. Explain the formation and functions of bile salts (3+2)
9. Explain Micturition reflex
10. Explain the mechanism of water reabsorption in renal tubules
11. Describe pacemaker potential with its ionic basis
12. Define autoregulation of blood flow with examples

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

13. Explain gap junction with example
14. Explain blood picture in Iron deficiency anemia
15. Define Apnea. Explain how apnea occurs after voluntary hyperventilation
16. Define Mass reflex
17. List the functions of skin

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) February 2021**	**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^+ concentration

2. Mitochondria are plentiful and best developed in parts of cells where
   (A) Active protein synthesis takes place (B) Energy requiring processes takes place
   (C) Active detoxification process is going on (D) Active secretion occurs

3. Clathrin is used in
   (A) Receptor Mediated endocytosis (B) Cell to cell adhesion
   (C) Exocytosis (D) Plasma Membrane

4. Eosinopenia is seen in
   (A) Bronchial asthma (B) Worm infestation
   (C) Urticaria (D) Cushing syndrome

5. In Glycated hemoglobin which of the following compound is attached to beta chain of HbA
   (A) Fructose (B) Glucose
   (C) Galactose (D) Glycogen

6. In a healthy person the most abundant plasma protein is
   (A) Globulin (B) Fibrinogen
   (C) Albumin (D) Prothrombin

7. The airway between the trachea and the alveolar sacs divide_____
   (A) 17 (B) 23
   (C) 29 (D) 32

8. Closing volume signifies
   (A) Intrapulmonary pressure (B) Compliance of lung
   (C) Intrapleural pressure (D) Residual volume and above

9. Muscles of inspiration include all **EXCEPT**
   (A) Diaphragm (B) External intercostal
   (C) Sternocleidomastoid (D) Internal intercostals

10. Lung diffusion capacity is measured with
    (A) CO_2 (B) CO
    (C) H_2 (D) N_2

11. Chymotrypsinogen is converted into chymotrypsin by action of
    (A) Trypsin (B) Pepsin
    (C) Fatty acids (D) Bile salts

12. 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

13. Vomiting centre is located in
    (A) Vestibular apparatus
    (B) Chemoreceptor trigger zone
    (C) Cerebellum
    (D) Stomach

14. Juxta glomerular cells are located in:
    (A) Afferent arteriole
    (B) Efferent arteriole
    (C) Glomerular tuft
    (D) Distal convoluted tubule

15. The following test is used to measure GFR
    (A) Glucose clearance test
    (B) Water clearance test
    (C) Para-aminohippuric acid (PAH) clearancetest
    (D) Inulin clearance test

16. Which of the following is least absorbable in tubules:
    (A) Urea
    (B) Creatinine
    (C) Glucose
    (D) Sucrose

17. All are properties of cardiac muscle **EXCEPT**:
    (A) Excitability
    (B) Conductivity
    (C) Autorhythmicity
    (D) Short refractory period

18. 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

19. Mean Blood pressure is,
    (A) Systolic BP + (Diastolic BP)/2
    (B) Systolic BP + 1/3rd Diastolic BP
    (C) Diastolic BP + (Systolic BP)/ 2
    (D) Diastolic BP + 1/3rd Pulse pressure

20. CNS ischemic response operates
    (A) At mean BP > 50 mmHg
    (B) At mean BP 60-150 mmHg
    (C) At mean BP <40 mmHg
    (D) Due to fall in arterial pO_2

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – FEBRUARY 2021

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. List the various hormones that influence blood glucose level. Discuss the biosynthesis, actions & regulation of secretion of insulin. Describe effects of its deficiency in young ones and middle aged ones (2+4+4)
3. Describe the origin, course, termination and functions of corticospinal tract with a neat–labelled diagram. Explain the differences between UMN and LMN lesions (1+3+1+2+3)

SHORT ESSAY QUESTIONS: 9 X 5 = 45

4. Describe hormonal regulation of serum Calcium levels
5. A 8 years old boy had history of stunted growth, with no other symptoms. His IQ was completely normal for his age. No history of any birth injury. On examination all the organ systems were normal. The blood investigations showed blood glucose level of 120mg⁄dl and growth hormone levels were 5ng⁄ml.

   a. Identify the condition
   b. What are the causes?
   c. What is the treatment?
   d. What is Laron dwarfism & Levi-Lorain dwarfism? (1+1+1+2)
6. Explain the physiological changes that occur during pregnancy
7. Describe the hormonal reflexes in lactation
8. Explain the mechanism of dark and light adaptation
9. Explain functions of middle ear
10. Describe the formation, circulation and functions of CSF
11. Describe the role of Hypothalamus in the regulation of a) Food Intake b) Water Intake
12. Describe physiological basis of neuromuscular blocking drugs

SHORT ANSWER QUESTIONS: 5 X 3 = 15

13. Explain milk ejection reflex
14. Name Indicators of ovulation
15. List the functions of semicircular canals
16. Explain physiological basis of Decerebrate rigidity
17. Explain Wallerian degeneration

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase I, (CBME) February 2021**	**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. Spermatozoa mature and acquire motility in
   (A) Epididymis (B) Vas–deferens
   (C) Rete–testes (D) Prostate

2. The basis of immunological test for pregnancy is detection of
   (A) Oestrogen (B) Progesterone
   (C) Human Chorionic Gonadotropin (D) Luteinizing hormone

3. Sex chromosome karyotype 47XXY is
   (A) Klinefelter's syndrome (B) Turner's syndrome
   (C) Testicular Feminization (D) Hermaphroditism

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

5. Basal part of the basilar membrane responds to
   (A) High pitch sound (B) Low pitch sound
   (C) No sound (D) Medium pitch sound

6. Optic disc contains
   (A) Rods (B) Cones
   (C) Both Rods & Cones (D) No Rods and Cones

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

8. Insulin facilitates glucose uptake in
   (A) Kidney tubules (B) RBCs
   (C) Brain (D) Skeletal Muscle

9. Growth hormone release is increased by:
   (A) Fasting (B) Somatostatin
   (C) REM sleep (D) Carbohydrate diet

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

11. Basal metabolic rate is increased by
    (A) Thyroxine (B) Antidiuretic hormone
    (C) Insulin (D) Oxytocin

12. Pheochromocytomas predominantly secretes:
    (A) Epinephrine (B) Norepinephrine
    (C) Serotonin (D) Dopamine

13. All are temperature decreasing mechanisms in the body except:
(A) Vasodilatation of cutaneous blood vessels
(B) Sweating
(C) Decreased heat production
(D) Shivering

14. REM sleep is characterized by:
(A) High–voltage, low–frequency EEG activity
(B) Elevated threshold for arousal by sensory stimuli
(C) Increased tone of skeletal muscles in the neck
(D) Increasing proportion of the total sleep time from infancy to adulthood

15. Circadian rhythm is controlled by which nuclei of hypothalamus:
(A) Paraventricular
(B) Ventromedial
(C) Arcuate
(D) Suprachiasmatic

16. One of the following is a property at the synapse:
(A) Law of forward conduction
(B) Law of projection
(C) All or none law
(D) Law of adequate stimulus

17. A 29-year–old man steps on a broken bottle with his bare right foot. His right leg immediately lifts while his left leg extends before he can consciously react to the pain. This action is attributable to which reflex?
(A) Walking reflex
(B) Stretch reflex
(C) Golgi tendon reflex
(D) Flexor withdrawal reflex

18. In excitable cells, repolarization is closely associated with:
(A) Na^+ efflux
(B) Na^+ influx
(C) K^+ efflux
(D) K^+ influx

19. Rigor mortis of a muscle is due to
(A) Excess ATP
(B) Depletion of ATP
(C) Excess Ca^{2+}
(D) Depletion of Ca^{2+}

20. At rest, binding sites on actin molecule are covered by
(A) Troponin
(B) Calcium
(C) ATP
(D) Troponin–tropomyosin complex

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MBBS PHASE – I
(CBME)
DEGREE EXAMINATION – FEBRUARY 2021

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. Describe various models to explain mechanism of enzyme action. Explain any three factors influencing enzyme activity (7+3)

3. Write the dynamics of blood glucose homeostasis. Explain the role of hormones in achieving this (5+5)

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

4. Enumerate the different transport mechanisms across the cell membrane with suitable examples
5. Describe the enzyme profile in Myocardial infarction
6. Mention the composition and importance of starch, glycogen and cellulose
7. Explain any 2 biological actions and 3 therapeutic uses of prostaglandins (2+3)
8. What are lipoproteins? Classify them and explain their functions (1+2+2)
9. Outline the synthesis of Seratonin and Melatonin. Add a note on Mono amino oxidase(MAO) inhibitor (3+2)
10. Explain the digestion and absorption of Proteins in the gastrointestinal tract
11. Describe the nutritional importance of Carbohydrates, Proteins and Lipids in human nutrition and give their calorific values (2+3)
12. A four year old child was brought to the hospital with frequent upper respiratory tract infection. Physical examination revealed retarded growth, pedal edema and hepatomegaly. She also had discoloration of skin and hair. Dietary history revealed that the child was mainly given rice and dal
    a) Name the type of PEM
    b) What is the cause of edema?
    c) What is Starling's hypothesis?
    d) What are the relevant biochemical investigation needed
    e) Cause for hepatomegaly

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

13. Describe the Symport system of transport with a suitable example
14. What are zymogen? Give examples
15. Write the significance of hexose monophosphate shunt pathway
16. What is Galactosemia? Name the enzyme defect and its clinical presentations
17. Name the Ketone bodies. Give two conditions characterized by excessive production of Ketone bodies

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) February 2021**	**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 receives newly formed proteins, packs and distributes them is :
   (A) Lysosome (B) Ribosomes
   (C) Golgi complex (D) Mitochondria

2. Membrane proteins that speed the movement of a solute across a membrane by facilitating diffusion are called :
   (A) Enzymes (B) Transporters
   (C) Ligands (D) Receptors

3. In enzyme kinetics, Km implies
   (A) The substrate concentration that gives one half Vmax
   (B) The dissociation constant for enzyme substarte complex
   (C) Concentration of enzyme
   (D) Half of the substrate concentration required to achieve Vmax

4. The mechanism by which an enzyme acts
   (A) Reducing the energy of activation (B) Increasing the pH
   (C) Increasing the energy of activation (D) Decreasing the pH

5. An example of functional plasma enzyme is
   (A) Lipoprotein lipase (B) Amylase
   (C) Aminotransferase (D) Lactate dehydrogenase

6. A regulator of the enzyme Glycogen synthase is
   (A) Citric acid (B) 2, 3 bisphosphoglycerate
   (C) Cyclic AMP (cAMP) (D) GTP

7. The most important initial source of blood glucose during fasting is
   (A) Muscle glycogen (B) Muscle protein
   (C) Liver triglyceride (D) Liver glycogen

8. Vitreous humour is composed of
   (A) Hyaluronic acid (B) Heparin
   (C) Chondroitin sulphate (D) Dermatan sulfate

9. Glucose uptake by liver cells is by receptors
   (A) GLUT 1 (B) GLUT2
   (C) GLUT 3 (D) GLUT4

10. Which of the following amino acids is a lipotropic factor?
    (A) Lysine (B) Leucine
    (C) Tryptophan (D) Methionine

11. The phospholipid that produces second messenger in hormonal action is
    (A) Phosphotidyl Lecithin (B) Plamalogens
    (C) Phosphatidyl Inositol (D) Phosphatidyl Ethanolamine

12. Esters of fatty acids with higher alcohol other than glycerol are called as
    (A) Oils (B) Polyesters
    (C) Waxes (D) Terpenoids

13. The precursor for vitamin D is
(A) Prostacyclin (B) Cholesterol
(C) Arachidonic acid (D) Triacylglycerol

14. Basal Metabolic rate (BMR) is raised in
(A) Hyperthyroidism (B) Under nutrition
(C) Starvation (D) Hypothyroidism

15. The value of Specific Dynamic Action (SDA) for Carbohydrates is ---------- %
(A) 5 (B) 15
(C) 30 (D) 10

16. Limiting amino acid in Pulses is
(A) Leucine (B) Lysine
(C) Methionine (D) Tryptophan

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

18. Which of the following is sulfur containg amino acid?
(A) Tyrosine (B) Phenylalanine
(C) Methionine (D) Valine

19. Gamma–amino butyric acid (GABA) is derived from which amino acid?
(A) Tyrosine (B) Tryptophan
(C) Glutamic acid (D) Serine

20. Branched chain ketoacids are excreted in urine in large quantities in :
(A) Phenylketonuria (B) Maple syrup urine disease
(C) Tyrosinosis (D) Hartnup disease

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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 – FEBRUARY 2021

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. Write in detail about transcription in eukaryotes. Add a note on post transcriptional modification of mRNA (8+2)

3. Describe the sources, RDA absorption, transport and storage of Iron in the body. List four Iron containing enzymes (1+1+4+1+1+2)

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

4. Explain the Lac Operon model of Gene expression

5. Explain the steps of Polymerase Chain Reaction(PCR) along with its clinical applications

6. Define detoxification. Describe the different phases of detoxification with suitable examples (1+4)

7. Explain causes and clinical manifestations of Hyperuricemia (3+2)

8. Mention the coenzyme form of pyridoxine and the reactions catalyzed by it. Name the antivitamins of pyridoxine (1+3+1)

9. What is Oxidative phosphorylation? Enumerate any three inhibitors of Oxidative phosphorylation (2+3)

10. What is metabolic acidosis? Mention the causes and its compensatory mechanism

11. Briefly describe the procedure of Creatinine clearance test and its significance (3+2)

12. A 2 year 6 months girl is brought to pediatrician with history of delayed attainment of motor milestone with abnormal gait, delayed dentition and recurrent chest infections. On examination: AF wide open, softening of cranial bones and frontal bossing, widening of costochondral junction, widening of wrists, Harrison groove – horizontal depression along lower anterior chest, protruded abdomen, lower extremity: varus deformity •Lab investigations Serum calcium level – 7.8mg⁄dL (low) Serum phosphate level –2mg⁄dL (low) Alkaline phosphatase –625U⁄L (high) 25OHD – 6ng⁄mL (low)
    a) Mention the probable diagnosis in this case
    b) Enumerate the causes and contributory factors for this disease
    c) Discuss the reason for low levels of Calcium and Phosphorous and, elevated alkaline phosphatase in this case

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

13. Define Mutation and Mutagens
14. Mention deficiency manifestations of zinc
15. Mention THREE disorders associated with Protein targeting
16. With a neat labelled diagram explain the basic structure of Immunoglobulin
17. Mention any 3 rights of patients

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MULTIPLE CHOICE QUESTIONS

Course:	**MBBS Phase – I, (CBME) February 2021**	**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. The following technique can be used to achieve the Gene amplification
   (A) Southern blotting (B) DNA finger printing
   (C) Polymerase chain reaction (D) Northern blotting

2. DNA replication occurs during the following phase of cell cycle
   (A) M phase (B) S phase
   (C) Gap 1phase (D) Gap 2 phase

3. Which of the following enzymes protect DNA from ageing?
   (A) DNA Polymerase (B) Topoisomerase
   (C) Deoxyribonuclease (D) Telomerase

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

5. Bile acids are conjugated with
   (A) Methionine (B) Cysteine
   (C) Glycine (D) Glutamic acid

6. The number of hydrogen bonds between guanosine and cytosine in DNA are
   (A) One (B) Two
   (C) Three (D) Four

7. The disease , Severe combined immunodeficiency(SCID),is due to deficiency of the following enzyme
   (A) AMP deaminase (B) Adenosine deaminase
   (C) Purine nucleoside phosphorylase (D) Adenyl succinase

8. Deficiency of Vitamin A causes :
   (A) Megaloblastic anemia (B) Hypoprothrombinemia
   (C) Xerophthalmia (D) Pernicious anemia

9. Calcitriol induces the synthesis of the following in the intestinal mucosa
   (A) Calbindin (B) Calcitriol
   (C) Calcitonin (D) Calcium dependent ATPase

10. Anti–infertility vitamin in lower animals is
    (A) A (B) D
    (C) E (D) K

11. Deficiency of Vitamin B12 causes
    (A) Scurvy (B) Pellagra
    (C) Megaloblastic anemia (D) Beriberi

12. Deficiency of which vitamin causes excretion of Formimino Glutamic Acid (FIGLU) in the urine :
    (A) Folic acid (B) Thiamine
    (C) Biotin (D) Niacin

13. Wernicke's encephalopathy is due to deficiency of
(A) Niacin (B) Cyanocobalamin
(C) Pantothenic acid (D) Thiamine

14. Biotin is a co–enzyme for
(A) Carboxylases (B) Decarboxylases
(C) Dehydrogenases (D) Dehydratases

15. The following vitamin has an antioxidant property
(A) Cholecalciferol (B) Ascorbic acid
(C) Folic acid (D) Thiamine

16. Which of the following act as a mobile electron carrier in Electron Transport Chain?
(A) Coenzyme Q (B) Complex II
(C) Complex III (D) Complex IV

17. The final common pathway for oxidation of major foodstuff is
(A) Citric acid cycle (B) Glycolyis
(C) Beta–oxidation of fatty acids (D) HMP shunt

18. Keshan's disease is due to deficiency of
(A) Selenium (B) Manganese
(C) Copper (D) Cobalt

19. Acute intermittent Porphyria is accompanied by increased urinary excretion of
(A) Porphobilinogen (B) Heme
(C) Bilirubin (D) Biliverdin

20. Which of these is an oncogene?
(A) ABL (B) BRCA 1
(C) P53 (D) Rb

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