

**MBBS PHASE – I**  
**(CBME)**  
**DEGREE EXAMINATION – FEBRUARY 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.

<b>Question Number</b>	<b>Marks</b>
1. M.C.Q.	<b>20 X 1 = 20</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
2. Define hemostasis. Describe the Clotting mechanisms. Add a note on Hemophilia.	(2+6+2)
3. Describe the transport of oxygen in the blood and add a note on hypoxic hypoxia.	(8+2)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
4. Describe pathophysiology and features of Erythroblastosis foetalis.	
5. Define acclimatization & list the compensatory changes in high altitude.	
6. Explain the mechanism of secretion of gastric juice.	
7. A 55 years old lady, presented with progressive dysphagia for 6 months, she complained of difficulty in swallowing food since 6 months ago, started with solid food. Besides, she also had loss of appetite and loss of weight Oesophago-gastric-duodenoscopy (OGDS) revealed residual food particles accumulated at the lower esophagus, with dilated lower esophagus and generalized whitish lesions. Barium swallow shows bird beak appearance on X Ray. Questions:	
a) What is the diagnosis?	(1+2+2)
b) What is the pathophysiology of this condition?	
c) What are the complications arising out of this condition?	
8. Describe the functions of Juxtaglomerular apparatus.	
9. Explain Micturition reflex.	
10. Describe the properties of cardiac muscle.	
11. Describe nervous regulation of blood pressure.	
12. List the functions of Endoplasmic reticulum.	
<b>SHORT ANSWER QUESTIONS:</b>	<b>5 X 3 = 15</b>
13. Explain the importance of blood groups.	
14. Define vital capacity with normal value.	
15. List the actions of secretin and Cholecystokinin (CCK).	
16. List three functions of loop of Henle.	
17. Define AV nodal delay. Explain its clinical significance.	

**MULTIPLE CHOICE QUESTIONS**

<b>Course:</b> MBBS Phase – I, (CBME) February 2023	<b>Max. Marks:</b> 20 Marks
<b>Subject :</b> Physiology Paper I, QP Code: A003	<b>Time:</b> 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<sup>+</sup> concentration  
(C) Higher Na<sup>+</sup> concentration (D) Lower H<sup>+</sup> ion concentration
2. Cell shape and mobility are provided by the following  
(A) Smooth muscle (B) Nucleus  
(C) Ribosomes (D) Cytoskeleton
3. Maintenance of constancy of internal environment is called  
(A) Haemostasis (B) Homeostasis  
(C) Glucostasis (D) Barostasis
4. Humoral immunity is served by  
(A) Helper T cell (B) Cytotoxic T cell  
(C) Natural killer cell (D) B lymphocyte
5. Intravascular clotting is normally prevented by  
(A) Heparin (B) Antithrombin  
(C) Protein C (D) All of the above
6. Each hemoglobin molecule can bind to how many numbers of O<sub>2</sub> molecules?  
(A) 1 (B) 2  
(C) 3 (D) 4
7. Chief component of surfactant is  
(A) Dipalmitoyl phosphatidyl choline (B) Phosphatidyl glycine  
(C) Neutral lipids (D) Proteins
8. Decompression sickness occurs when person  
(A) Dives 100 meters deep in sea (B) Ascends slowly to sea level  
(C) Unable to come to sea level (D) Ascends rapidly to sea level
9. Lung compliance is increased in  
(A) Lung fibrosis (B) Emphysema  
(C) Cancer of bronchus (D) Pulmonary edema
10. **MOST** potent respiratory stimulant is  
(A) Oxygen (B) Carbon dioxide  
(C) Hydrogen ion (D) Potassium ion
11. Pancreatic juice rich in water and bicarbonate but poor in enzymes is secreted in response to  
(A) Pancreozymin (B) Cholecystokinin (CCK)  
(C) Secretin (D) Enterokinase
12. Movement of the small intestine is  
(A) Peristalsis (B) Antral systole  
(C) Retropulsion (D) Mass peristalsis

13. Alpha cells of pancreas secrete  
(A) Insulin (B) Glucagon  
(C) Somatostatin (D) Cholecystokinin (CCK)
14. Following part of the nephron is highly permeable to water  
(A) Thick ascending limb of loop of Henle (B) Thin descending limb of loop of Henle  
(C) Thin ascending limb of loop of Henle (D) Distal convoluted tubule
15. Obligatory volume of urine per day in ml is  
(A) 600 (B) 800  
(C) 500 (D) 1000
16. The following test is used to measure GFR  
(A) Glucose clearance test (B) Water clearance test  
(C) Para-aminohippuric acid (PAH) clearance test (D) Inulin clearance test
17. Cardiac muscle cannot be tetanized because  
(A) Heart has abundant blood supply  
(B) It has high myoglobin content  
(C) Contractile response is more than half over during the action potential  
(D) Less than 1% of total energy liberated is provided by aerobic metabolism
18. Maximum filling of the ventricles takes place during,  
(A) Protodiastole (B) Isovolumetric relaxation phase  
(C) Ventricular diastole proper (D) Last rapid filling phase
19. An irregular rapid heart rate with abnormal QRS complexes and no P waves suggests  
(A) Sinus arrhythmia (B) Second degree heart block  
(C) Paroxysmal tachycardia (D) Atrial fibrillation
20. Threshold of the baroreceptor reflex is seen at mean arterial blood pressure of:  
(A) 15 mmHg (B) 60 mmHg  
(C) 200 mmHg (D) 40 mmHg

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**DEGREE EXAMINATION – FEBRUARY 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.

<b>Question Number</b>	<b>Marks</b>
1. M.C.Q.	<b>20 X 1 = 20</b>
<b>LONG ESSAY QUESTIONS:</b>	<b>2 X 10 = 20</b>
2. Describe the mechanism of hearing. Add note on tests for hearing.	(7+3)
3. Define Sarcomere. Discuss the Excitation Contraction Coupling in a skeletal muscle.	(3+7)
<b>SHORT ESSAY QUESTIONS:</b>	<b>9 X 5 = 45</b>
4. Describe the functions of parathyroid hormone.	
5. Explain the functions of growth hormone.	
6. Explain the physiological basis of clinical features in Hypothyroidism.	
7. Describe the functions of testosterone.	
8. Describe the mechanism of ovulation. List the indicators of ovulation.	
9. A 16-year-old woman complains that she is having difficulty to read the book though she is able to see the distant objects. 1)Name the condition. 2)What is the cause? 3)How do you correct it?	(1+1+3)
10. Describe the centers of speech with their location and functions.	
11. Explain Stretch Reflex with a neat-labeled diagram.	
12. Describe Strength Duration Curve with neat labeled diagram.	
<b>SHORT ANSWER QUESTIONS:</b>	<b>5 X 3 = 15</b>
13. Explain the role of glucocorticoids in Glucose balance.	
14. List the functions of Blood-Testis Barrier.	
15. List the functions of semicircular canals.	
16. Explain reward and punishment mechanisms of human brain.	
17. Define and explain Motor Unit.	

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**MULTIPLE CHOICE QUESTIONS**

<b>Course:</b> MBBS Phase I, (CBME) February 2023	<b>Max. Marks:</b> 20 Marks
<b>Subject :</b> Physiology Paper II, QP Code: A004	<b>Time:</b> 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. Primordial follicle is converted into primary follicle  
(A) In intrauterine life (B) At birth  
(C) At puberty (D) After menopause
2. A mature spermatozoan typically survives for how many weeks?  
(A) 1-2 weeks (B) 3-4 weeks  
(C) 4-6 weeks (D) 6-10 weeks
3. The level of hormone indicating placental insufficiency is:  
(A) Oestrogen (B) Progesterone  
(C) Human Chorionic Gonadotropin (D) Human Chorionic Somatomammotropin
4. Tympanic reflex helps in  
(A) Protecting auditory receptors (B) Amplifying sound  
(C) Equalizing the pressure (D) Transmission of sound
5. Near response of eye is **NOT** associated with  
(A) Pupillary constriction (B) Convergence of the visual axes  
(C) Increase in convexity lens (D) Ciliary muscle relaxation
6. High frequency sound waves cause vibrations of  
(A) Portion of the basilar membrane toward helicotrema  
(B) Entire basilar membrane  
(C) Middle portion of basilar membrane  
(D) Basal portion of basilar membrane
7. A visual exam in an 80 year old man shows that he has a reduced ability to see objects in the upper and lower quadrants of the left visual fields of both eyes but some vision remains in the central regions of the visual field. The diagnosis is  
(A) Central scotoma (B) Heteronymous hemianopia with macular sparing  
(C) Lesion of the optic chiasm (D) Homonymous hemianopia with macular sparing
8. Cortisol causes  
(A) Decrease in Blood glucose (B) Eosinopenia  
(C) Neutropenia (D) Anaemia
9. Calcitonin is produced by  
(A) Thyroid gland (B) Parathyroid gland  
(C) Thymus (D) Kidney
10. The final active form of vitamin D is produced by  
(A) Liver (B) Bone  
(C) Kidney (D) Skin
11. Increased secretion of growth hormone after puberty leads to  
(A) Cretinism (B) Dwarfism  
(C) Acromegaly (D) Gigantism

12. Increase in insulin receptor is seen in  
(A) Acromegaly (B) Starvation  
(C) Obesity (D) Diabetes
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. 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
15. The primary function of basal ganglia is:  
(A) Coordination of movements (B) Planning and programming of voluntary movements  
(C) Neuroendocrine control (D) Memory
16. Chief center for righting reflexes is in the region of:  
(A) Cerebral cortex (B) Midbrain  
(C) Medulla (D) Spinal cord
17. GATE through which pain impulses reach the lateral spinothalamic system is closed by  
(A) Stimulation of small fibers (B) Stimulation of large fibers  
(C) Central transmission cells activation (D) Inhibition of dorsal columns
18. Length-tension relation in a muscle is explained by  
(A) Weber-Fechner law (B) Bell-Magendie Law  
(C) Sliding filament law (D) Starling law
19. All or none phenomenon is applicable to  
(A) Spike potential (B) Receptor potential  
(C) Excitatory postsynaptic potential (D) End plate potential
20. A 55-year-old woman visits her physician because of double vision, eyelid droop, difficulty chewing and swallowing and general weakness in her limbs. All these symptoms worsen with exercise and occur more frequently late in the day. Which of the following drugs would likely alleviate this patient's symptoms?  
(A) Atropine (B) Botulinum toxin antiserum  
(C) Curare (D) Neostigmine

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