

**KALOJI NARAYANA RAO UNIVERSITY OF
HEALTH SCIENCES
MBBS FIRST YEAR EXAMINATIONS:
NOVEMBER, 2023
WARANGAL, TELANGANA STATE-506002
PHYSIOLOGY (New Regulation)
PAPER - I**

Time: 3 Hours

Max Marks: 100

Note: Answer all questions

Draw diagrams whenever necessary with Black Ball point pen/HB pencil/any dark Colour pencil

Multiple Choice Questions:

1. Which statement about feedback control systems is incorrect 10 X 1 = 10

a) Most control systems of the body act by negative feedback

c) Generation of nerve action potentials involves positive feedback

b) Positive feedback usually promotes stability in a system

d) Feed-forward control is important in regulating muscle activity

2. Gap junctions

a) Maintain cellular polarity

- c) Have corresponding connections between cells
b) Occur at the apices of cells
d) Help in transport of polypeptides molecules
3. P50 or the P02 which produces 50% saturation of arterial haemoglobin is
- a) 30 mm Hg
c) 28 mm Hg
b) 26 mm Hg.
d) 22 mm Hg
4. Central pattern generator:
- a) Pre-Botzinger complex
c) Nucleus ambiguus
b) Nucleus of tractus solitarius
d) Retrofacialis
5. Which part of the ECG corresponds to ventricular repolarization?
- a) The P wave
c) The T wave.
b) The QRS duration
d) The U wave
6. Duration of cardiac cycle at the rate of 100beats/min is
- a) 0.8sec
c) 1 sec
b) 0.6sec
d) 0.2sec
7. Renin is secreted by
- a) Cells in the macula densa.

- c) Cells in the distal tubules
 - b) Cells in the proximal tubules
 - d) Juxtaglomerular cells
8. Small intestinal motility is increased by:
- a) Gastrin.
 - c) Glucagon
 - b) Secretin
 - d) GIP
9. Trypsin inhibitor:
- a) Inhibits the action of pancreatic enzymes in the lumen of the duodenum
 - c) In excess causes acute pancreatitis
 - b) Inhibits activation of trypsin in the pancreas.
 - d) Is produced by enterocytes
10. In which part of the cell does the inborn errors of metabolism characterized by accumulation of substrate in excess in various organ cells due to defective functioning
- a) Lysosome
 - c) Golgi Apparatus
 - b) Mitochondria
 - d) Nucleus

Essay/ Long Answer Questions:

11. A 23-year-old male met with a road traffic accident brought to the Emergency department with restlessness and irritability. On examination, patient had rapid thready pulse, hypotension, rapid shallow breathing and oliguria.

~~2 X 15-30~~

a) Identify the condition.

b) Define shock and its types.

c) State about cardiac output in this patient.

(2+3+3+7)

d) Discuss in detail about factors regulating cardiac output.

12. A 22-year-old female attending to outpatient department complains of tiredness and easy fatiguability even with mild exertion. On examination, patient's skin and mucous membranes appear pale. Patient's peripheral smear showed decrease in the size of RBC with increased central pallor. Lab report shows decreased MCV, decreased MCH and decreased MCHC.

a) Identify the above condition.

b) Discuss in detail about stages the of Erythropoiesis

c) Describe the regulation of Erythropoiesis.

d) Add a note on osmotic fragility of RBC's.

(2+5+5+3)

Short Answer Questions:

13. Describe the factors influencing GFR. $7 \times 6 = 42$

14. Name the different body fluid compartments. Give the composition of extracellular and intracellular fluid
Mention the methods to measure ECF.

15. Write composition and explain the functions of Pancreatic juice

16. Write the movements of small intestine.

17. Enumerate the factors regulating Chemical

Respiration

18. Define Asphyxia, types and stages of Asphyxia.
19. Describe professional qualities of a physician.

Very Short Answer Questions:

20. Heart block. $6 \times 3 = 18$
21. Mismatched blood transfusion reaction.
22. Describe the physiological significance of Pulmonary surfactant.
23. Loop of Henle - filtration fraction.
24. Cystometrogram.
25. Endocytosis.

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