

Question Paper

Exam Date & Time: 08-Sep-2018 (02:00 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

MELAKA MANIPAL MEDICAL COLLEGE (MANIPAL CAMPUS)
MBBS PHASE - I STAGE - I DEGREE EXAMINATION - SEPTEMBER 2018

Saturday, September 08, 2018

Physiology [M1PHY]

Marks: 90

Duration: 150 mins.

PHYSIOLOGY - PAPER - II (ESSAY)

Answer all the questions

Draw diagrams wherever appropriate

- 1) Jefferson, a 38-year-old businessman met with a road traffic accident on his way to work. There was profuse bleeding from his leg. He was rushed to the intensive care unit of a nearby hospital. On examination, the doctor observed, cyanosis, low blood pressure, respiratory rate of 30 breaths/min., P_{aO_2} of 60 mmHg, and P_{aCO_2} of 38mmHg. He was immediately treated with oxygen, blood transfusion and appropriate wound care was given.
 - 1A. Comment on P_{aO_2} and P_{aCO_2} in the above case.
 - 1B. Give the basis for cyanosis in Jefferson.
 - 1C. Describe the mechanism for increased respiratory rate in Jefferson.

(1+2+2 = 5 marks)
- 2)
 - 2A. List any three functions of saliva.
 - 2B. Describe peristalsis in small intestine.

(3+2 = 5 marks)
- 3)
 - 3A. Explain the role of hypothalamus in thermoregulation.
 - 3B. Outline the degenerative changes that occur in nerve cell body when nerve fibre is injured.

(2+3 = 5 marks)
- 4) Give physiological basis for the following:
 - 4A. Atria and ventricles do not contract simultaneously.
 - 4B. Murmurs are heard when there is mitral stenosis.
 - 4C. Increase in afterload decreases cardiac output.
 - 4D. Orthostatic hypotension
 - 4E. Coronary blood flow is maximum during ventricular diastole.

(5x1 = 5 marks)
- 5) Mention the cause and any two symptoms of myasthenia gravis. Give the physiological basis for its treatment.

(1+2+2 = 5 marks)
- 6)
 - 6A. Explain parturition reflex with the help of a flow chart.

(3 marks)
 - 6B. Give physiological basis for the following:
 - i. Lactation amenorrhea.
 - ii. Rise in basal body temperature after ovulation.

(2 marks)

- 7) With the help of a flow chart describe the different stages of erythropoiesis. List any two factors essential for normal erythropoiesis. (4+1 = 5 marks)
- 8) Describe the events in the synaptic transmission with the help of a flow chart. (3 marks)
- 9) 9A. Enumerate any three features of NREM sleep.
9B. List four clinical features of Parkinson disease and mention the physiological basis for any two of them. (3+4 = 7 marks)
10. Sam, a 40-year-old mine worker consulted the physician with complaints of progressive difficulty in hearing, in his left ear. The physician performed two tuning fork tests followed by audiometry to check for hearing loss. Presuming partial loss of cochlear hair cells in Sam's left ear as the cause for the test findings, answer the following questions:
10A. Name the type of deafness in Sam.
10B. Name the tuning fork tests and mention the findings of the tests in Sam's left ear. (1+4 = 5 marks)
- 11A. Describe the cause and two clinical features of cretinism.
11B. A 38-year-old woman presents with Addison disease. Comment on her serum electrolyte levels and justify your answer. (3+2 = 5 marks)
- 12) Define GFR and describe the forces governing GFR. (1+4 = 5 marks)

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