

GANPAT UNIVERSITY

B. Tech. Semester: IV Biomedical & Instrumentation Engineering

CBCS Regular Examination April - June 2015

2BM404 Human Anatomy and Physiology - II

Time: 3 Hours

Total Marks: 70

- Instruction:**
- 1 Write each section in separate answer book.
 - 2 Please explain with the help of diagram wherever it is necessary.
 - 3 Figure to the right indicates marks.
 - 4 Assume suitable data, if necessary.

SECTION - I

Q. 1.

12

- 1) Describe the structure of eye.
- 2) Write in detail about physiology of smell.

OR

Q. 1.

12

- 1) Describe the anatomy of cerebellum. What are functions of cerebellum? What are the disorders of cerebellum?
- 2) Define Reflex. Write in detail on the classification of Reflex.

Q. 2.

11

- 1) Describe the Neuromuscular junction in detail. How does transmission of impulse from nerve to muscle fiber take place?
- 2) Write in detail on Brachial plexus.

OR

Q. 2.

11

Define integumentary system. Write in detail on the structure of the skin. What are the functions of the skin? Describe the applied physiology of skin.

Q. 3. Write in detail about any three:

12

- 1) Ventricles
- 2) Physiology of taste
- 3) BBB – Blood Brain Barrier
- 4) EEG

SECTION – II

Q. 4.

12

- 1) Write any 2 functions of gastric HCl.
- 2) Explain the emulsification of fats with diagram.
- 3) Explain the cephalic phase of digestion.
- 4) Write the difference between ligaments and tendons (at least two points).
- 5) Explain the bone growth in thickness.
- 6) Explain any one factor which controls the glomerular filtration rate (GFR).

OR

Q. 4.

12

- 1) How much is the total filtrate formed in a day in kidneys? How much is the portion reabsorbed? How is the final urine thrown out of the body?
- 2) What is a dialyser? Name two hormones which control the GFR.
- 3) Name two muscle proteins. Name the contractile tissue of the body.
- 4) What is sarcolemma? Why smooth muscles are called 'smooth'?
- 5) Calculate the Net Filtration Pressure in the nephrons of kidney.
- 6) Write two points of difference between nephron and neuron.

Q. 5. Answer the following (each definition of 1 mark & rest questions 3 marks each): 11

- 1) Define: a) Excretory system b) Digestive system
- 2) Explain the chemical digestion by small intestine.
- 3) What is sarcomere? Draw the diagram of sarcomere. Explain how the contraction of a muscle is produced.
- 4) Write at least three points of difference between skeletal muscles, cardiac muscles and smooth muscles.

OR

Q. 5. Answer the following (each definition of 1 mark & rest questions 3 marks each): 11

- 1) Define: a) Hepatitis b) Osteoporosis
- 2) What is there in the bone matrix? Which cells are bone forming cells? Which cells are bone destroying cells?
- 3) Name the bone which covers brain and the bone which covers spinal cord. What is a 'girdle'?
- 4) Why bone is hard? Draw the structure of a bone and label all the parts.

Q. 6. Answer any three:

12

- 1) Explain hepatic acinus model with diagram.
- 2) Write any four functions of liver.
- 3) Explain both the types of counter - current mechanisms.
- 4) Explain bone remodeling with diagram.