

M.Sc. (Instrumentation) Examination, 2023
1st Year, 2nd Semester
BIO MEDICAL SCIENCE – II

Time: Two Hours

Full Marks: 40

Answer any four of the following questions

1. Draw and label four chambers of heart showing different valves. What is the difference between tricuspid and mitral valves? How deoxygenated blood returns to heart? What is septum?
(5+2+2+1)
2. How heart rhythms are generated? Discuss basic functions of nodes. What implant is used due to dysfunction of SA node? What is the basic principal of function of this medical device? What medical tests doctor may prescribe before implantation?
(3+2+1+2+2)
3. What are the differences between endocrine and exocrine gland? Briefly describe the general mechanism of action of both non-steroid and steroid hormones at the cellular level. What are the differences between pheromone and hormone?
(2+6+2)
4. What is difference between pulmonary and systemic circulation? Draw the routes of these circulatory paths. Mention the role of lungs in this circulatory process.
(3+4+3)
5. What is EEG? What is ECG? What type of brain disorders are detected by EEG? Draw and describe different waves of ECG.
(2+2+3+3)
6. Describe the structure of hemoglobin A and myoglobin. Describe how oxygen binds to hemoglobin A and myoglobin. What is Bohr Effect?
(5+3+2)
7. How somatic nervous system and autonomic nervous system function? What do you mean by the term sympathetic and parasympathetic nervous system? Name two cranial nerve related to the vision and smell.
(4+4+2)