Question Bank (G-scheme)

Name of subject: BIOMEDICAL INSTRUMENTATION **Unit Test: I**
Subject code: 17666 **Course: IS**

Semester: VI

Chapter 1 Fundamentals of physiology (24 marks)

3 marks

1.List the various organs in the respiratory system.

2. State the functions of : i) mitral valve (ii) myocardium (iii) aorta

3. Draw a neat labeled diagram of a neuron.

4. List the four chambers of the heart. State the significance of SA node.

4 marks

5. Draw a neat block diagram of man –instrument system and explain any two blocks .

6. Explain the mechanism of breathing with suitable diagram.

7.Draw a neat labeled diagram of heart.

8.Draw the diagram of cardiovascular circulation, anology to a pump and hydraulic piping system.

9. State the functions of : i) medulla oblongata (ii) cerebellum (iii) reticular activation system (iv) hypothalamus.

10. Define : (i) TV (ii)ERV (iii) IRV (iv) IC with respect to lung volume and capacities

11.State the functions of : i) lungs (ii) pons (iii) AV node (iv).tricuspid valve.

Chapter 2 . Bioelectric signals and electrodes (18 marks)

3 marks

12. What are unipolar and bipolar leads in case of ECG?

13.Draw a neat diagram of commercial micro electrode with metal film

14.List any six technical specifications of ECG machine

4 marks

15. Describe resting potential and action potential with the help of a neat waveform.

16. Describe the various stages of sleep with neat waveforms.

17. Where will you connect electrodes in bipolar limb lead I and lead III for ECG measurement? Draw the diagram in both cases. State the values of amplitude of T wave and R wave and duration of T-R interval and QRS interval of ECG.

18. Draw and explain the working of ECG machine with a neat block diagram.

19. List any 8 technical specifications of EMG machine.

20. Explain metal plate and suction cup electrode with neat diagrams

Chapter 3 Measurement of heart sound, blood pressure, respiration rate ,blood flow. (8 marks)

3 marks

21. Define systolic and diastolic blood pressure. State the value for a healthy adult.

22. Explain the various heart sounds with the help of a waveform.

4 marks

23. Describe the technique of plethysmography for blood flow measurement.

24. Describe the procedure of BP measurement using sphygmomanometer.

25. Describe the working of spirometer