

Duration: 03 Hours.

Total marks: 80

Instructions to the candidates if any:-



N. B. (1) Question No. 1 is compulsory.

(2) Answer any **Three** out of remaining questions.(3) Assumptions made should be **clearly** stated.

Q. 1) Solve

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- a) Explain Nervous system
- b) Explain propagation of Action Potential
- c) Explain origin of ECG, EMG and EEG.
- d) Explain Larmor frequency with its equations.

Q. 2) a) Explain types of bio potential electrode

10

b) Explain rate responsive pacemaker with block diagram

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Q. 3) a) Explain EMG measurement with block diagram

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b) Explain ultrasonic blood flow measurement

10

Q.4) a) Explain working principle of MRI

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b) Explain modes of ultrasound imaging

10

Q. 5) a) Explain working of heart lung machine

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b) Explain working of artificial kidney and precautions to be taken

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Q.6) a) What is cardiac output? Explain its measurement

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b) Explain physiological effects of electric current?

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