

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

(2) Attempt any **four** questions out of remaining **six** questions.

(3) **Figures to the right** indicate **full marks**.

(4) **Illustrate with sketches** whenever **required**.

21. a. What is thermistor? What are the types of thermistor? Which materials are used to manufacture the thermistor? What are the applications of thermistor? 10
- b. What is a capacitor? List the different types of capacitors. What are the materials used to manufacture the capacitors? What are the technical specifications of the capacitors? 10
22. a. Explain the colour codes used to read the value of a fixed resistor with tolerance limit. What are the technical specifications of fixed resistors? Give any two examples. 10
- b. Describe the construction, operation and applications of reed relay. 10
23. a. Differentiate between brazing and soldering. Also state the different types of fluxes used in soldering and purpose of fluxes in soldering process. 10
- b. Discuss the construction, basic principle and application of solar cell. Also mention the materials used to manufacture the solar cell. 10
24. a. Draw the neat labeled diagram of rotary switch and toggle switch. Explain its working principle. 10
- b. What is heat sink? What are the different types and shapes of heat sinks. List the applications of heat sinks. 10
25. a. Explain the biomedical applications of any two metallic biomaterials. 10
- b. Explain any two methods used to test the surface properties of biomaterials. 10
26. a. Explain the experimental setup used to measure corrosion rate. 10
- b. Explain in short the tests carried out for biological testing of biomaterials. 10
27. a. Explain the properties of stainless steel and titanium. 10
- b. Explain any three types of connectors used in electronic equipments. 10