

2024

Paper : SEC0107803

(Physics Workshop Skills)

Full Marks : 30

Time : 1.5 hours

(The figures in the margin indicate full marks for the question)

1. Answer the following objective type questions : (any five)

1x5=5

(i) Which of the following is not a joining process ?

(a) Machining

(b) Soldering

(c) Brazing

(d) Welding

(ii) Digital voltmeters can be used to measure

(a) Voltage

(b) Force

(c) Current

(d) resistance

(iii) A sine wave has a frequency 50 Hz. Its angular frequency in radian/sec is

(a) $50/\pi$ (b) $50/2\pi$ (c) 50π (d) $100/\pi$ **P.T.O.**

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- (iv) Systematic errors are
 - (a) Instrumental Errors
 - (b) Environmental Errors
 - (c) Observational Errors
 - (d) All of these
- (v) Which measurement given below is not possible to measure using an analog digital multimeter
 - (a) Resistance
 - (b) Phase of a signal
 - (c) AC voltage
 - (d) Capacitance

2. Answer the following questions : (any five) 2x5=10

- (i) Describe advantages of IC.
- (ii) Write down the instrument used to measure
 - (a) A wire with diameter 1.008 mm
 - (b) A wire with diameter 0.05 cm
 - (c) Volume of a beaker with 100ml capacity
 - (d) Height of a building
- (iii) What is a gear system ? Explain its working.
- (iv) What are the different types of welding process ?
- (v) How does a braking system work ?
- (vi) Write the uses of pulley ?
- (vii) How does a timer circuit work ?
- (viii) Write the types of welding joints and welding defects.
- (ix) What is the difference between a regulated and unregulated power supply ?
- (x) Write the uses of digital CRO.

Contd.

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3. Answer the following questions : (any three) $3 \times 5 = 15$
- (i) Draw the block diagram of a digital multimeter.
 - (ii) Describe the use of sextant for measuring the height of a mountain.
 - (iii) Draw a diagram and explain how a wheel is connected to gear system.
 - (iv) Describe the use of screw-gauge for the measurement of the thickness of a paper.
 - (v) Explain the working principle of power generating system.
 - (vi) Describe the advantages of welding over soldering.
