

2019

B.Sc.

3rd Semester Examination

**PHYSICS (Honours)**

**Paper - SEC-1T**

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

**(Physics Workshop Skill)**

1. Answer any *five* questions of the following :

5×2=10

- (a) Convert 1 atmosphere pressure into CGS unit.
- (b) Define least count.
- (c) Define screw pitch of a screw gauge.
- (d) Write down the use of sextant.
- (e) Write down the types of welding defects.

*[ Turn Over ]*

(f) How galvanometer used as voltmeter.

(g) Why base region of transistor is thin.

(h) Write down unit of resistivity and conductivity.

2. Answer any *four* questions : 4×5=20

(a) Write a short note one-Turbine.

(b) Explain backlash error.

(c) Define welding and and explain various types of welding.

(d) Point difference between iron & steel. Which types materials are better for steel.

(e) Explain briefly Common machine tools.

(f) Explain multimeter and its different uses.

3. Answer any *one* question : 1×10

(a) Define cathode ray oscilloscope (CRO). Explain briefly its different parts. 2+8

(b) (i) Write down differences between soldering and welding.

(ii) What is integrated circuit (IC)

(iii) Why discrete circuits are replaced by IC.

(iv) What is classification of IC.

(v) Where do we use linear and digital IC.

2+2+3+1+2

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**(Electrical Circuit and Network Skills)**

1. Answer any *five* questions of the following :

5×2=10

- (a) What is choke ? And its use.
- (b) Define Eddy current and discuss its use.
- (c) Why core of a transformer is laminated ?
- (d) Explain rotating magnetic field.
- (e) Define form factor.
- (f) Write Limitation of Ohm's Law.
- (g) Which type materials is used for Fuse element ?

[ Turn Over ]

(h) What are the main difference between Ammeter and Voltmeter

2. Answer any *four* questions : 4×5

(a) Write down the differences between star and delta conection.

(b) Describe Lap and wave winding.

(c) Write down the relation between current and emf at primary & secondary coil.

(d) Calculate instantaneous power in a ac circuit.

(e) Discuss different types of Loss in a transformer.

3. Answer any *one* question : 1×10

(a) What is principle of a A/C motor ? Discuss its different parts. Which meter is best A/C or D/C.  
4+3+3=10

(b) Derive the equation of emf produced in a DC generator. Define slipring and commutator.  
6+4=10

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