

2024/FYUG/ODD/SEM/  
PHYSEC-101T/055

FYUG Odd Semester Exam., 2024

PHYSICS

( 1st Semester )

Course No. : PHYSEC-101T

( Workshop Skill )

Full Marks : 50

Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks  
for the questions

UNIT—I

1. Answer any *three* from the following :  $1 \times 3 = 3$

- (a) Write the SI unit of temperature.
- (b) Define backlash error in a screw gauge.
- (c) Write the least count formula.
- (d) The density of turpentine oil is  $0.86 \text{ g cm}^{-3}$ . Find its value in SI unit.

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( Turn Over )

( 2 )

2. (a) Explain the instrumental error in vernier calipers. 2  
Or  
(b) Define pitch and least count. 1+1=2
3. (a) What are the standard systems of measurements? Write the precautions to be followed when a metre scale being used for measuring a given length. 2+3=5  
Or  
(b) What is the use of a sextant? Describe the use of sextant for measuring the height of the buildings. 1+4=5

**UNIT—II**

4. Answer any three from the following : 1×3=3  
(a) What is machining?  
(b) Define alloy.  
(c) Define welding process.  
(d) Name any important joining process used in workshop.
5. (a) Name one alloy of iron and mention its two properties. 2  
Or  
(b) Why should one remove hydrogen, which is formed during the melting of metal?

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( Continued )

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6. (a) What are welding defects? State the classification of welding defects. 1+4=5  
Or  
(b) Why is lubricating oil used in machine work? Describe the different properties of lubricating oil. 2+3=5

**UNIT—III**

7. Answer any three from the following : 1×3=3  
(a) Mention two materials used for cutting tools.  
(b) What is milling?  
(c) What is bench vice?  
(d) Mention one tool used in fitting operation.
8. (a) Why are lubricating oils used in machines? 2  
Or  
(b) Write the importance of machining process.
9. (a) Describe the construction and application of a bench vice. 5  
Or  
(b) Describe the process of drilling a hole on a work piece by a pillar drill machine.

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**UNIT—IV**

10. Answer any *three* from the following : 1×3=3

- (a) Mention one application of CRO.
- (b) Name one device which is used as a voltage regulator in power supply.
- (c) Mention the basic electrical quantities that a multimeter can measure.
- (d) Why is transformer used in power supply?

11. (a) Explain the basic difference of a regulated and unregulated power supply. 2

Or  
(b) Why is trigger used in an oscilloscope?

12. (a) What is a CRO? Give block diagram of CRO. Explain briefly construction of CRO. 1+2+2=5

Or  
(b) Describe briefly the working principle of an electronic switch. 5

**UNIT—V**

13. Answer any *three* from the following : 1×3=3

- (a) What is a pulley?
- (b) Mention three types of lever.

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( Continued )

( 5 )

(c) Mention one use of gear system.

(d) What are the two types of braking system?

14. (a) Explain how a wheel is connected to a gear system. 2

Or

(b) Define mechanical advantage of a lever.

15. (a) Describe the different types of gears and their uses. 5

Or

(b) Explain how electric power system generation, transmission and distribution are done.

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