



2019/TDC/ODD/SEM/PHSSEC-301T/076

TDC (CBCS) Odd Semester Exam., 2019

PHYSICS

(3rd Semester)

Course No. : PHSSEC-301T

(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* questions : 1×3=3

- (a) Give the SI unit of temperature.
- (b) The density of wood in CGS system is 0.5 g cm^{-3} . Find its value in SI.
- (c) Write down the expression for volume of a cylindrical beaker of length L and radius R .
- (d) What is back-lash error in a screw gauge?



(2)

2. Answer any *one* question : 2
- (a) Explain instrumental error in Vernier Calipers.
 - (b) What are meant by pitch and least count?
3. Answer any *one* question : 5
- (a) How can you measure the diameter of a thin wire by screw gauge?
 - (b) Describe the use of sextant to measure the height of a building.
- UNIT—II
4. Answer any *three* questions : 1×3=3
- (a) What is machining?
 - (b) Name any one type of electrical furnace used in foundry.
 - (c) What is meant by cast iron?
 - (d) Name any important joining process used in workshop.
5. Answer any *one* question : 2
- (a) What is stainless steel?
 - (b) Name one alloy of copper and mention its any two useful properties.

(3)

6. Answer any *one* question : 5
- (a) Explain metal casting.
 - (b) What is welding? Briefly explain any one type of welding. 1+4=5
- UNIT—III
7. Answer any *three* questions : 1×3=3
- (a) Name any two materials used for making cutting tools.
 - (b) What is the effective length of a file?
 - (c) Name any one tool used in fitting operation.
 - (d) What is a shaper related to workshop?
8. Answer any *one* question : 2
- (a) What is milling?
 - (b) What is bench vise?
9. Answer any *one* question : 5
- (a) What is lathe? Give a list of types of lathe used for manufacturing machine parts. 1+4=5
 - (b) Explain drilling process.



(4)

UNIT—IV

10. Answer any *three* questions : $1 \times 3 = 3$
- (a) Explain the term 'soldering'.
 - (b) Mention one application of CRO.
 - (c) Name one device which is used as a voltage regulator in power supply.
 - (d) Why is transformer used in power supply?
11. Answer any *one* question : 2
- (a) State various electrical quantities that can be measured with a multimeter.
 - (b) What is the difference between regulated and unregulated power supply?
12. Answer any *one* question : 5
- (a) Draw the block diagram of a CRO and explain briefly the function of each block. $2+3=5$
 - (b) Describe in detail the working of a timer circuit.

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UNIT—V

13. Answer any *three* questions : $1 \times 3 = 3$
- (a) What is the utility of gear system?
 - (b) Mention any two types of braking system.
 - (c) What are three types of lever?
 - (d) What is a pulley?
14. Answer any *one* question : 2
- (a) Explain the working principle of a power generation system.
 - (b) Explain how a wheel is connected to a gear system.
15. Answer any *one* question : 5
- (a) What do you understand by (i) fixed, (ii) movable and (iii) compound pulleys? Explain with example of each.
 - (b) Explain briefly the mechanism of lifting of heavy weight using lever.

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