



2022/TDC/ODD/SEM/PHSSEC-301T/154

TDC (CBCS) Odd Semester Exam., 2022

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) What is vernier constant?
 - (b) State the SI unit of power.
 - (c) Why is vernier calliper called slide calliper?
 - (d) If we use a slide calliper and a screw gauge to measure the thickness of a glass plate, which one will give more accurate result?



(2)

2. Answer any *one* question : 2
(a) Convert 1 joule into ergs.
(b) Explain what is backlash error.

3. Answer any *one* question : 5
(a) Describe the principle of screw gauge. What is the least count of a screw gauge and how can it be used to calculate the diameter of a thin wire? 1+1+3=5
(b) What is sextant? How can a sextant be used to measure the height of a building? 1+4=5

UNIT—II

4. Answer any *three* questions : 1×3=3
(a) What is foundry?
(b) What is milling?
(c) Define forging.
(d) Name two hand tools associated with foundry.
5. Answer any *one* question : 2
(a) What are the advantages of welding joints?
(b) What is forming? Explain briefly.

(3)

6. Answer any *one* question : 5
(a) What is casting? Describe the different casting methods. What are the defects in casting? 1+2+2=5
(b) What is machining process? Explain the different machining operations. 1+4=5

UNIT—III

7. Answer any *three* questions : 1×3=3
(a) What is chipping?
(b) What is bench vice?
(c) Name two important fitting tools.
(d) What is reaming?
8. Answer any *one* question : 2
(a) Distinguish between drilling and boring.
(b) Give a brief idea about cutting tools.
9. Answer any *one* question : 5
(a) What is shaper? Describe the principal parts of a shaper. How can shapers be classified? 1+2+2=5
(b) Describe the principle of milling and state the different types of milling machines. 2½+2½=5



(4)

UNIT—IV

10. Answer any *three* questions : $1 \times 3 = 3$

- (a) What is transistor?
- (b) What is regulated power supply?
- (c) What is relay?
- (d) What is the need of using integrated circuits?

11. Answer any *one* question : 2

- (a) Explain the soldering of electric circuits.
- (b) How can a multimeter be used to measure the potential difference across a circuit?

12. Answer any *one* question : 5

- (a) Describe IC 555 timer with pin diagram. What are the features of IC 555 timer? $3+2=5$
- (b) Draw the block diagram of a CRO. Explain the components of CRO and state its uses. $2+2+1=5$

UNIT—V

13. Answer any *three* questions : $1 \times 3 = 3$

- (a) What is lever?
- (b) What is pulley?

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(Continued)

(5)

- (c) Give two examples of 1st kind of lever.
- (d) What is brake?

14. Answer any *one* question : 2

- (a) Discuss the 2nd kind of lever system. Give an example.
- (b) Describe briefly about gear system.

15. Answer any *one* question : 5

- (a) Describe briefly about the braking system. What are the different types of brake? $2+3=5$
- (b) Explain the principle of hydro-electric power system. What are the advantages and disadvantages of hydroelectric power system? $1+2+2=5$

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