

**2023/TDC(CBCS)/ODD/SEM/
PHSSEC-301T/155**

TDC (CBCS) Odd Semester Exam., 2023

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*

SECTION—A

**Answer fifteen questions, selecting any three from
each Unit :**

1×15=15

UNIT—I

- 1. What are the CGS and SI units of force?**
- 2. Write the expression for the volume of a cylindrical shell of inner radius r_1 , outer radius r_2 and length L .**

(2)

3. What is the main advantage of a screw gauge over vernier caliper?
4. Why is screw gauge called a screw gauge?

UNIT—II

5. Name a material used for manufacturing.
6. What is an alloy?
7. List any two manufacturing methods.
8. What is the composition of steel?

UNIT—III

9. What is a shaper?
10. What is milling?
11. What is machine processing?
12. Why are lubricating oils used?

UNIT—IV

13. What is a relay circuit?
14. Why is multimeter called a multimeter?

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(Continued)

(3)

15. Mention two uses of a multimeter.
16. What is IC 555 timer?

UNIT—V

17. What do you mean by a gear?
18. Mention two types of power generation system.
19. What is the main advantage of a gear?
20. What do you mean by a prime mover?

SECTION—B

Answer *five* questions, selecting *one* from each

Unit : 2×5=10

UNIT—I

21. Convert 1 newton into dyne.
22. What is instrumental error?

UNIT—II

23. Write one advantage and one disadvantage of using composite material for manufacturing process.
24. What is forming? Explain briefly.

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(Turn Over)

(4)

UNIT—III

25. Describe the process of cutting of a metal sheet using a blade.
26. How will you drill holes of different diameters inside a metal sheet?

UNIT—IV

27. Explain the soldering of electrical circuits.
28. Write down two applications of a CRO.

UNIT—V

29. Describe two different types of brakes.
30. How will you lift a heavy weight using a lever?

SECTION—C

Answer *five* questions, selecting *one* from each
Unit : 5×5=25

UNIT—I

31. Describe the principle of working of vernier caliper. What is the least count of a vernier caliper and how can it be used to calculate the diameter of a thin wire? 1+1+3=5

(5)

32. What is a sextant? How can it be used to measure the height of a mountain? 1+4=5

UNIT—II

33. What is welding? Discuss some of the welding defects. 2+3=5
34. Name the two most common types of materials used in manufacturing. Discuss the advantages of these two materials. 2+3=5

UNIT—III

35. What is a lathe? Describe the principal parts of a lathe. How can lathes be classified? 1+2+2=5
36. What is a bench vice? How will you use a bench for fitting? 2+3=5

UNIT—IV

37. What is a regulated power supply? Explain its functioning with the help of a circuit diagram. 2+3=5
38. What is an electronic switch? Explain the working of a transistor as an electronic switch with the help of a circuit diagram. 2+3=5

(6)

UNIT—V

39. What is a pulley and why is it used?
Demonstrate a pulley experiment showing its
utility. 2+3=5
40. Explain the principle of thermal power
generation system. What are the advantages
and disadvantages of thermal power
generation system? 1+2+2=5

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