

**2025 / FYUG / ODD / SEM /
PHYIDC-101T / 196**

FYUG Odd Semester Exam., 2025

PHYSICS

(1st Semester)

Course No. : PHYIDC-101T

(Physics is Daily Life)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

UNIT—I

. Answer any *four* of the following questions :

1×4=4

- (a)** What do you mean by SI system of units?
- (b)** What is meant by renewable source of energy?
- (c)** What do you mean by precision?

- (d) Give an example of conservation of momentum.
(e) How do we represent a physical quantity?

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2. Answer any one of the following questions :

- (a) What are the fundamental units in physics?
(b) Explain how precision and accuracy differ from each other.

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3. Answer any one of the following questions :

- (a) Define linear momentum. State and derive law of conservation of linear momentum. 2+6
(b) What is measurement error? Explain different types of error giving examples. What are the consequences of measurement error? 1+5+2

UNIT—II

4. Answer any four of the following questions :

1×4

- (a) Mention one application of Bernoulli's principle.
(b) What does weather satellite mean?

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- (c) Mention one advantage of friction.
(d) What does weightlessness mean?
(e) How is helium balloon different from hot air balloon?

Answer any one of the following questions : 2

(a) Explain the term gravity with example.

(b) Explain how planets obey law of conservation of momentum while orbiting the sun.

Answer any one of the following questions : 8

- (a) (i) What is a geosynchronous satellite? What are the conditions for a satellite to be geosynchronous? 1+3=4
(ii) Mention some of the uses of geosynchronous satellite. 4

(b) Write the various laws of friction. State some of the disadvantages of friction in mechanics. Discuss the effect of friction for the motion of a cyclist while taking a turn on a curved path. 2+2+4=8

UNIT—III

(5)

7. Answer any four of the following questions :

- (a) What does an MP3 player mean?
- (b) Why are most of the electric fans designed with three blades?
- (c) What is the difference between traditional watch and smart watch?
- (d) What do you mean by temperature gradient of a refrigerator?
- (e) What is a microwave oven?

8. Answer any one of the following questions :

- (a) Mention two uses of electronic display.
- (b) Write few disadvantages of using mobile phone.

9. Answer any one of the following questions :

- (a) What are the key differences between UV and RO water purification technologies in terms of process and effectiveness? Explain the environmental impact of RO water purifiers especially regarding water wastage and energy use.

- (b) Who first devised electric fan? Write four applications of electric fan. Explain how the electric fans are controlled.

$$1+4+3=8$$

UNIT—IV

10. Answer any four of the following questions :

$$1 \times 4 = 4$$

- (a) What is radio isotope?
- (b) Give two examples of radio isotope.
- (c) State the nature of sound waves.
- (d) Which SI unit is used to measure sound intensity?
- (e) What is the frequency range of visible light?

11. Answer any one of the following questions : 2

- (a) Explain the meaning of half-life in radioactivity.

- (b) What are the harmful effects of sound wave on the human ear?

12. Answer any one of the following questions : 8

- (a) What are the stages of acute radiation syndrome? Explain the harmful effects of radiation on living organisms. Write four medical uses of radiation. $2+2+4=8$

- (b) How is the acoustic quality of a building defined? List five common materials used for acoustic purposes. Write four advantages of good building acoustics.

1+3+4=8

UNIT—V

13. Answer any four of the following questions :

1×4=4

- (a) What is X-ray?
 (b) What do you mean by ultrasound?
 (c) Explain the meaning of sterility in humans.
 (d) Why is radiation therapy administered in small doses?
 (e) What is the meaning of somatic cells in humans?

14. Answer any one of the following questions :

2

- (a) Which diseases can be detected by ultrasound?
 (b) What are the key considerations in setting radiation exposure limits?

15. Answer any one of the following questions :

8

- (a) Write four common applications of medical imaging. Mention the possible risks involved in X-ray, CT scan and MRI.
 (b) (i) What are the short-term and long-term effects of ionizing radiation on biological tissues?
 (ii) What is the full name of a DNA test? Explain how a cell repairs damaged DNA.

4+4=8

4

1+3=4

