

D 133521

(Pages : 2)

Name.....

Reg. No.....

**FIRST SEMESTER (CUFYUGP) DEGREE EXAMINATION
NOVEMBER 2025**

Applied Physics/Physics

APH1FM105/PHY1FM105—PHYSICS IN DAILY LIFE

(2024 Admission onwards)

Time : One Hour and a Half

Maximum : 50 Marks

Section A*Answer all questions.**Each question carries 2 marks.**Ceiling 16 marks.*

1. What is the principle behind the heating process of a microwave oven ?
2. Explain how the fresh air fan functions in a kitchen.
3. What role does copper play in kitchen utensils ?
4. Describe how noise is produced by a dishwasher.
5. What is the principle behind a weighing scale ?
6. Explain why metal objects can feel colder than plastic ones.
7. What are the physics behind spin bowling in cricket ?
8. Why is airflow separation important in football physics ?
9. Explain the importance of boundary layer effects in football.
10. How does the hot spot technology work in cricket ?

Section B*Answer all questions.**Each question carries 6 marks.**Ceiling 24 marks.*

11. Discuss how an induction cooktop utilizes electromagnetic fields to heat cookware.
12. Explain the physics behind the goalkeeper's throw in football.

Turn over

13. Compare the working principles of Hawkeye and Snicko technologies in cricket.
14. Describe how turbulence affects the trajectory of a football during a game.
15. What are the common methods to reduce energy waste in the kitchen ?

Section C

*Answer any **one** question.
The question carries 10 marks.*

16. Discuss in detail the physics of pace bowling in cricket, including seam, air resistance, and swing.
17. Explain the principles of a banana kick in football, including the role of the Bernoulli effect and Magnus effect.

(1 × 10 = 10 marks)

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Section A*Answer all questions.**Each question carries 2 marks.**Ceiling 16 marks.*

1. Explain how energy is wasted in a typical kitchen.
2. What is the purpose of using stainless steel in kitchen utensils ?
3. How does a refrigerator maintain low temperatures ?
4. Describe the critical speed in football aerodynamics.
5. What happens during the turbulent wake phase of a football's flight ?
6. Why do objects at lower temperatures become more brittle ?
7. Explain the significance of choosing willow wood for cricket bats.
8. What is the function of a snickometer in cricket ?
9. How does a modern photocopier (Xerox machine) work ?
10. Explain why plastic utensils are sometimes preferred over metal ones in the kitchen.

Section B*Answer all questions.**Each question carries 6 marks.**Ceiling 24 marks.*

11. Describe the physics behind the Magnus effect and its importance in sports.
12. How does the Bernoulli effect influence the motion of a football during a game ?

Turn over

13. Explain the working of hot spot technology in cricket.
14. How do pendulum clocks maintain accurate time based on harmonic oscillations ?
15. Discuss the physics of modern kitchen appliances and their impact on energy efficiency.

Section C

*Answer any **one** question.
The question carries 10 marks.*

16. Explain the differences between spin bowling during different times of the day, focusing on the reasons for greater spin later in the day.
17. Discuss the physics behind sound in air and how it relates to noise in the kitchen.

(1 × 10 = 10 marks)