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K24FY1256

Reg No:.....
Name :.....

First Semester FYUGP Physics Examination
NOVEMBER 2024 (2024 Admission onwards)
KU1MDCPHY101 (PHYSICS AROUND US)
(DATE OF EXAM: 29-11-2024)

Time : 90 min Maximum Marks : 50

Part A (Answer any 6 questions. Each carries 2 marks)

- 1. What do you mean by GPS system? Mention any one of its applications 2
- 2. How does an induction cooktop work? 2
- 3. Why do popcorns expand while heating? 2
- 4. What is the role of insulation in preventing energy loss in the kitchen? 2
- 5. Name the forces acting on a football when a player kicks it? 2
- 6. How do the initial velocity and angle of launch affect the range of a soccer ball? 2
- 7. How does airflow around a football create a boundary layer? 2
- 8. What is the difference between longitudinal and transverse waves? 2

Part B (Answer any 4 questions. Each carries 6 marks)

- 9. Describe the principle and working of an electric tooth brush. 6
- 10. Describe various parts of a microwave oven and list their functions. 6
- 11. Describe the process by which a refrigerator maintains a constant temperature 6
- 12. Discuss the key technique involved in trapping the ball. 6
- 13. Discuss how air resistance affect the range and accuracy of long passes or shots in soccer? 6
- 14. Explore the concept of dangerous resonance, using examples such as the collapse of the Tacoma Narrows Bridge or vibration in buildings. What are the scientific principles behind this phenomenon? 6

Part C (Answer any 1 question(s). Each carries 14 marks)

- 15. Describe the working of different types of touch screens used in ATM 14
- 16. (a) Discuss various phenomena exhibited by light in the formation of rainbows. How does the observer's position affect the perceived colours of a rainbow? 7
- (b) Apply the concept of static electricity to explain the phenomenon of invisible induction and how it can lead to sparks in everyday situations. 7