



U8181

Reg. No.:

Name:.....

**University of Kerala**

First Semester Degree Examination, November 2024

Four Year Under Graduate Programme

Multi Disciplinary Course

Physics

UK1MDCPHY103 PHYSICS IN ARTS AND SPORTS

Academic Level: 100-199

Time:1½ Hours**Max.Marks:42****Part A.**

Answer All Questions Objective Type. 1 Mark Each.

(Cognitive Level: Remember/Understand)

6 Marks. Time: 6 Minutes.

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
1.	Define unpolarized light	Remember	1
2.	What are the three primary colours used in additive colour mixing?	Remember	2
3.	How does a periodic oscillation differ from a non-periodic motion?	Understand	1
4.	Define torque and provide its formula	Understand	1
5.	What is Newton's first law of motion?	Understand	1
6.	Outline the function of the retina in the human visual system?	Understand	2

Part B.

Answer All Questions, Short Answer. 2 Marks Each.

(Cognitive Level: Understand/Apply)

8 Marks. Time: 24 Minutes.

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
7.	Explain the basic characteristics of simple harmonic motion and give one example from everyday life.	Understand	1
8.	Explain the principle of conservation of momentum and give an example where it applies.	Understand	3
9.	How does changing the f-number affect the exposure and depth of field in a photograph?	Understand	2
10.	Discuss the relation between the Fibonacci sequence and the Golden Ratio?	Understand	2

Part C.

Answer all 4 Questions, choosing among options* within each question.
Long Answer. 7 marks each. (Cognitive Level: Apply/Analyse/Evaluate/Create)
28 Marks. Time: 60 Minutes.

Qn. No.	Question	Cognitive Level	Course Outcome (CO)
11.	A. Explain the reflection and refraction process in diamonds. OR B. How do sunglass's function	Understand	1
12.	A a) Explain principle of superposition of sound waves. b) Explain loudness, timbre, amplitude and frequency OR B. a) Explain resonators in musical instruments b) Describe beats.	Understand	3
13.	A. Outline the relationship between the Fibonacci series and the Golden Ratio in natural systems.(b) Examine the concept of symmetry in nature and its importance in biological systems. OR B. Explain the key characteristics of projectile motion, and how does it differ from linear motion?(b) Define the range of a projectile and explain the factors that determine it.	Understand	2
14.	A. Explain the Newton's three laws of motion and their significance (b) Define velocity and differentiate it from speed. OR B. With a labelled diagram of the eye explain how the human visual system processes light and forms visual perceptions.	Understand	2