

Sample Question Paper

Course Name: XYZ

Instructor: Dr. ABC

Date: November 17, 2024

Instructions:

- All questions are compulsory.
- Use of calculator is not allowed unless stated.
- Write your answers clearly and legibly.
- The marks for each question are indicated against the question.

Section A: Multiple Choice Questions (MCQs) - 10 Marks

Answer the following questions. Each question carries 2 marks.

1. Which of the following is the smallest prime number?

- (a) 0
- (b) 1
- (c) 2
- (d) 3

2. What is the value of $\sin(90^\circ)$?

- (a) 0
- (b) 1
- (c) $\frac{\sqrt{2}}{2}$
- (d) Undefined

3. The capital of France is:

- (a) Berlin
- (b) Madrid
- (c) Paris
- (d) Rome

4. Which is the formula for the area of a circle?

- (a) $A = \pi r^2$
- (b) $A = 2\pi r$
- (c) $A = \pi d$
- (d) $A = r^2$

5. What is the largest continent by area?

- (a) Africa
- (b) Asia
- (c) Europe
- (d) North America

Section B: Short Answer Questions - 20 Marks

Answer the following questions. Each question carries 5 marks.

1. Explain the concept of *Newton's Second Law of Motion* and provide an example.
2. Define the term "photosynthesis." Explain the process briefly.
3. Solve the quadratic equation: $x^2 - 5x + 6 = 0$
4. What is the Pythagorean theorem? Demonstrate its use with an example.
5. Discuss the causes and effects of deforestation.

Section C: Long Answer Questions - 30 Marks

Answer any three of the following questions. Each question carries 10 marks.

1. Discuss the theory of evolution proposed by Charles Darwin. Explain its key principles and evidence supporting the theory.
2. Derive the formula for the area of a triangle using basic trigonometry and give an example of its application.
3. Analyze the impact of World War II on the global political landscape. Discuss the formation of the United Nations and its significance.
4. Explain the laws of thermodynamics. Discuss their application in everyday life, particularly in engines and refrigerators.
5. What is Artificial Intelligence? Discuss the different types of AI and their applications in real life.

Section D: Case Study (10 Marks)

Answer the following question. It carries 10 marks.

Case Study: In a small village, farmers have been using chemical fertilizers for many years. Recently, they observed a decline in soil fertility and crop yields. The government has introduced a policy to promote organic farming and sustainable agricultural practices. The farmers are skeptical about adopting the new methods, citing higher costs and unfamiliarity with organic farming techniques.

1. Discuss the pros and cons of switching to organic farming. What challenges do the farmers face, and how can these be overcome? (5 marks)
2. Suggest some steps the government can take to educate and encourage farmers to adopt sustainable agricultural practices. (5 marks)