Model Paper

Computer Science and Entrepreneurship Grade-12

(Intermediate Part-II)

OBJECTIVE

Total Marks: 1 × 15 = 15 **Time Allowed: 20 mins**

Question 1: Encircle the correct answer. Four possible answers A, B, C, D are given to each question. The choice which you think is correct, fill that circle in front of that question with marker or pen ink in the answer book. Cuttings are filling two or more circles will result in zero marks for that question.

1. Which protocol is mainly used to view web pages?
   a. FTP b. DNS
   c. TCP d. HTTP

2. Which device converts digital signals for internet transmission?
   a. Switch b. Hub
   c. Modem d. NIC

3. Which of the following is a compound proposition?
   a. P b. Q
   c. P AND Q d. True

4. A proposition that is true for at least one case is called:
   a. Unsatisfiable b. Invalid
   c. Satisfiable d. Equivalent

5. The purpose of a truth table is to:
   a. Write Programs b. Store Data
   c. Evaluate Logical Expression d. Design Algorithms

6. Which concept hides data inside a class?
   a. Inheritance b. Polymorphism
   c. Encapsulation d. Abstraction

7. Which keyword is used to define a class in Python?
   a. def b. class
   c. function d. object

8. CRUD operations in database stand for:

a. Create, Read, Update, Delete
b. Create, Run, Update, Delete
c. Create, Read, Update, Download
d. Create, Read, Manage, Delete

9. A unique identifier for each record in a table:

a. Primary Key
b. Foreign Key
c. Secondary Key
d. Alternate key

10. Data organized in rows and columns is called:

a. Un-structured Data
b. Structured Data
c. Raw Data
d. Random Data

11. Machine learning allows systems to:

a. Work without data
b. Learn from data and improve performance
c. Only store data
d. Replace databases

12. Which of the following is a test statistic?

a. Mean
b. t-value
c. Mode
d. Median

13. A hypothesis is:

a. A final result
b. Test Value
c. Proposed Explanation
d. A dataset

14. Which of the following is an example of Cloud Computing?

a. AWS
b. MS-Word
c. Smartwatch
d. USB flash drive

15. What is the main danger of downloading unknown software?

a. Faster browsing
b. Malware infection
c. Getting rewards
d. Extra storage

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Computer Science and Entrepreneurship Grade-12

(Intermediate Part-II)

Total Marks: 60 **Time Allowed: 2:10 hours**

SUBJECTIVE

SECTION-I

Q # 2: Write short answers of any six questions from the following: (2 × 6 = 12)

i. What is network architecture?

ii. Which topology is being used, and why did this failure happen?

iii. How does DNS (Domain Name System) function like a phonebook for the internet?

iv. Why is propositional logic insufficient for a statement like "All students love coding," making predicate logic necessary instead?

v. What is meant by computational thinking?

vi. What do you mean by proposition?

vii. What are truth values?

viii. What is the primary difference between Supervised Learning and Unsupervised Learning?

ix. Why we used machine learning?

Q # 3: Write short answers of any six questions from the following: (2 × 6 = 12)

i. How does encapsulation help in keeping data secure and private?

ii. If you have a class called Player for a video game, write a single line of code to add an attribute for the player's health and set it to 100.

iii. What is difference between class and object?

iv. What is encapsulation in OOP, why is it important?

v. How do you connect python to a database like SQLite?

vi. What is the CRUD operation in database management?

vii. Difference between entity and attribute?

viii. What do you meant by relationship?

ix. Difference between primary key and foreign key?

Q # 4: Write short answers of any six questions from the following: (2 × 6 = 12)

i. What is the main difference between the Null Hypothesis (H_0) and the Alternative Hypothesis (H_a)?

ii. Why is it considered an ethical issue to completely delete "outliers" (unusual data points) from your dataset just to make your hypothesis look correct?

iii. If you reject the Null Hypothesis at a 5% significance level ($\alpha = 0.05$), what is the percentage chance that you might be making a mistake and rejecting a true hypothesis?

iv. Why is the p-value important in hypothesis testing?

v. How Artificial Intelligence is useful in our daily lives? Give two examples.

vi. How does blockchain ensure security and transparency in transactions?

vii. How does Two-Factor Authentication(2FA) improve online security?

viii. How does e-waste impact the environment?

ix. How can downloading suspicious software affect a computer?

SECTION-II

Note: Attempt any three descriptive answers of the following questions: (8 × 3 = 24)

Q. 5: What is OSI model? Explain its layers and their functions? **(08)**

Q. 6: Write a Python program to demonstrate multilevel inheritance using Grandfather, Father, and Son. **(08)**

Q. 7: Describe model evaluation techniques and explain accuracy, precision, recall and F1-score. **(08)**

Q. 8: Discuss the benefits and challenges of Artificial Intelligence (AI) in society. How can ethical principles ensure fair and responsible use of AI? **(08)**

Q. 9: Describe how privacy and security settings on online platforms can be managed. Explain why reading privacy policies is important for data protection? **(08)**