MODEL PAPER FOR COMPUTER SCIENCE AND ENTREPRENEURSHIP GRADE-11

Objective (Part-I)

Time Allowed: 20 mins **Max. Marks: 15**

Question 1: Multiple Choice Questions (MCQ)

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 or filling two or more circles will result in zero mark in that question.

i. _____ design pattern is a way to make sure that a specific object or resource is created only once in a program:

a. Factory b. Singleton

c. Observer d. Strategy

ii. Software development model involving short cycles or sprints:

a. Waterfall model b. Lean Software development

c. Egale Methodology d. Scrum

iii. Non-functional requirements are mainly concerned with:

a. System usability and performance b. Business rules

c. Data input and validation d. Core logic of the application

iv. The operator used for exponentiation in Python is:

a. ** b. ##

c. // d. /

v. Time Complexity of Depth First Search (DFS) in a graph is:

a. O (n log n) b. O(v)

c. O(V+E) d. O(n)

vi. An operation that removes an item from the top of the stack:

a. Push
b. Pop
c. Peek
d. Add

vii. The square of the standard deviation is known as:

a. Mean
b. Variance
c. Median
d. Range

viii. A line graph is most useful for:

a. Comparing categories
b. Showing trends over time
c. Displaying proportions
d. Visualizing frequency distributions

ix. A cloud deployment model combining public and private cloud features:

a. Public cloud
b. Hybrid cloud
c. Community cloud
d. Multi-cloud

x. The type of harmful software that secretly monitors user activity:

a. Spam
b. Cookies
c. Spyware
d. Pharming

xi. The treat involving user redirections to fake websites:

a. phishing
b. Spam
c. Spyware
d. Pharming

xii. Boolean operator used to exclude a term from search results:

a. OR
b. AND
c. NOT
d. NEITHER

xiii. Which of the following does not fall under the category of Intellectual Property (IP)?

a. Copyright
b. Trademark
c. Patent
d. Physical Properties

xiv. A technology commonly used in design thinking is:

a. SWOT Analysis
b. Brainstorming
c. Learning manufacturing
d. Data mining

xv. The Primary goal of Entrepreneurship is:

a. To create new technologies
b. To manage finances
c. To solve problems and create value
d. To compete with large corporations

Subjective (Part-II)

Time Allowed: 2:10 hours **Max. Marks: 60**

Q# 2: Write short questions to any six (6) questions: **(2 × 6 = 12)**

i. Differentiate between functional and non-functional requirements.

ii. Why testing phase is important in Software Development Life Cycle?

iii. Describe the factory pattern with an example.

iv. Describe the role of Sprints in Agile.

v. Differentiate integer and float data types in python.

vi. How default parameters work in Python?

vii. Write the syntax of a simple if-else statement in Python.

viii. Describe the purpose of a trademark.

ix. Why is it important to evaluate the reliability of online sources?

Q# 3: Write short questions to any six (6) questions: **(2 × 6 = 12)**

i. Summarize the key idea behind greedy algorithms.

ii. Differentiate between well-defined and ill-defined problems.

iii. Outline main steps involved in Generate-and-test method.

iv. What is edge computing?

v. Differentiate between Elasticity and on-demand access in Cloud computing.

vi. Describe the concept of serverless architecture.

vii. What do you mean by PaaS? Give an example.

viii. Why is it important for users to understand the “Terms of Use”?

ix. Differentiate Phishing and Pharming.

Q# 4: Write short questions to any six (6) questions: **(2 × 6 = 12)**

i. How the insert ( ) function works in python List?

ii. Differentiate between Enqueue and Dequeue operations in Queue.

iii. Discuss the role of leaf node and root node in a tree.

iv. Briefly describe two types of data visualization.

v. Define probability with an example.

vi. Find Median of six students scored 40, 50, 60, 70, 80 and 90.

vii. Briefly define Entrepreneurship.

viii. What is the main focus of Design Thinking?

ix. Explain the importance of a Business Pitch.

Subjective (Part-III)

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

Q#5: Write a Python program using while loop to print all the odd numbers between 1 and 100. Also count and print the total number of odd numbers. (8)

Q#6: Discuss the difference between time complexities and space complexities. How do they impact the choice of an algorithm for a specific problem? (8)

Q#7: Define Graph, differentiate between Directed and Undirected Graphs. (8)

Q#8: Explain Data Collection methods. (8)

Q#9: Explain the common clauses found in term of use and describe how they protect both the service provider and the user. (8)