B.C.A. DEGREE EXAMINATION – SEPTEMBER 2020

COMPUTER APPLICATION

Third Year

INTRODUCTION TO INTERNET PROGRAMMING

Time : 3 Hours   Maximum Marks : 75

PART A — (5 × 5 = 25 Marks)

Answer any FIVE questions.

1.   Write the structure of Java programming with example.

2.   Explain about branching statements in JAVA.

3.   List and explain the features of Java.

4.   What is inner class and explain how to create it?

5.   Write a Java program to count the number of ODD and EVEN numbers.

6.   Write about Java applets and applications.

7.   Discuss about the visibility control of JAVA.

PART B — (5 × 10 = 50 Marks)

Answer any FIVE questions.

8. Discuss data types used in Java.

9. Discuss in detail about looping structure in java.

10. Briefly explain about interface with suitable example.

11. Explain abstract class and methods with suitable example.

12. Explain the exception handling with an example.

13. Discuss in detail about various type of constructors.

14. Define Thread. Explain about the life cycle of a thread.

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MANAGEMENT PRINCIPLES AND TECHNIQUES

Time : 3 Hours   Maximum Marks : 75

PART A — (5 × 5 = 25 Marks)

Answer any FIVE questions.

1.   Define Management. What are the functions managers perform to attain the set goals?

2.   Explain any four models in O.R.

3.   Write down the Mathematical formulation of L.P.P.

4.   What are the rules for constructing a project network?

5.   Construct the network for each of the projects whose activities and their precedence relationships are as given below.

      $A < C, D; B < C, D; C < E; D, E < F$

6.   Write any three examples of replacement situations.

7.   Distinguish between individual replacement policy and group replacement policy.

Answer any FIVE questions.

8. What is planning? Explain the steps involved in Planning.

9. Using graphical Method, Solve the following L.P.P

   Maximize $Z = 5x_1 + 8x_2$

   Subject to

   $$15x_1 + 10x_2 \leq 180$$
   $$10x_1 + 20x_2 \leq 200$$
   $$15x_1 + 20x_2 \leq 210 \text{ and } x_1, x_2 \geq 0.$$

10. Solve the following transportation problem

	1	2	3	4	Supply
I	21	16	25	13	11
II	17	18	14	23	13
III	32	27	18	41	19
Demand	6	10	12	15	

11. Calculate the total float, free float and independent float for the project whose activities are given below:

Activity	1-2	1-3	1-5	2-3	2-4	3-4	3-5	3-6	4-6	5-6
Duration (in weeks)	8	7	12	4	10	3	5	10	7	4

12. Construct the network for the project whose activities and the three time estimates of activities (in weeks) are given below. Compute,

    (a) Expected duration of each activity

    (b) Expected variance of each activity

(c)   Expected variance of the project length.

Activity	t_o	t_m	t_p
1-2	3	4	5
2-3	1	2	3
2-4	2	3	4
3-5	3	4	5
4-5	1	3	5
4-6	3	5	7
5-7	4	5	6
6-7	6	7	8
7-8	2	4	6
7-9	1	2	3
8-10	4	6	8
9-10	3	5	7

13.   A machine owner finds from his past records that the cost per year of maintaining a machine whose purchase price is Rs. 6,000 is as given below:

Year	1	2	3	4	5	6
Maintenance cost (Rs.)	1,000	1,200	1,400	1,800	2,300	2,800
Resale value (Rs.)	3000	1500	750	375	200	200

Determine at what year is replacement due?

14.   The cost patterns of 2 machines A and B when money value is not considered is given below.

Year	Machine A	Machine B
1	900	1,400
2	600	100
3	700	700

Find the cost patterns for each machine when money is worth 10% per year and hence find which machine is less cost.

UG EXAMINATION – SEPTEMBER – 2020

COMPUTER APPLICATIONS

Third Year

C++, INTERNET PROGRAMMING, JAVA / ACTIVEX

Time: 3 Hours   Maximum Marks: 75

<u>SECTION - A</u>

(Note: The students are instructed to write the following in the answer sheet "Aim, Algorithm, Flow Chart /Data Flow Diagram, Program, Output and Result")

Answer any one question.

1. Write a C++ program to swap two numbers.
2. Write a program for finding roots of the given quadratic equation
3. Develop a Program for Electricity charge calculation (Concept: Implementing Multiple Inheritance).

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