Avinashilingam Institute for Home Science and Higher

Education for women, Coimbatore-641 043

Master's Degree Examination – November 2017

III Semester

Class: II MCA **Max.Marks: 60**

Major: Computer Applications **Time: 3 Hours**

12MCAC13 RESOURCE MANAGEMENT TECHNIQUES

Part – A **(10 X ½ = 5 Marks)**

Answer the following

Circle the correct answer:

1. In linear programming, most popular non-graphical procedure is classified as

a) Linear procedure b) Non-graphical procedure

c) Graphical procedure d) Simplex method

2. A queuing model is specified and represented symbolically in the form (a/b/c) : (d/e). What is the letter "d"?

a) Inter arrival time b) Service mechanism

c) Number of service d) The capacity of the system e) The queue discipline

3. The CPM is _____.

a) Critical Path Method b) Critical Path Management

c) Circuit Path Management d) Combine Path Method

4. In queue description M/M/1, the number of servers are____.

a) 1 b) M c) 2 d) None of these

5. There are certain items which do not deteriorate but fail completely after certain amount of use is called as _____.

a) Group replacement theory b) Individual replacement theory

c) Both (a) and (b) d) None of these

6. The ____ is used in the decision making process of replacing a used equipment with a substitute.

a) Replacement theory b) Sequencing technique

c) Resource technique d) Steady state

7. Linear programming is _____.

a) Constraint optimization model b) Constraint decision making model

c) Mathematical programming model d) All of the above

8. The Vogel Approximation Method is an improved version of

a) Minimum Cell Cost Method b) Northwest Corner Method

c) Both (a) and (b) c) None of these

9. What is the disadvantage of PERT?

a) Calculate exactly how long a project will take b) Critical path identification

c) Depends upon the project d) Focuses primarily on the time aspect of activities

10. In North west corner rule the allocation is done in ____.

a) Upper left corner b) Upper right corner

c) Middle cell in the transportation table d) Cell with the lowest cost

Part – B **(5 X 4 = 20 Marks)**

Answer ALL Questions

Each answer should not exceed 200 words or one page

11. (a) Write short notes on dual simplex method.

(or)

11. (b) How to solve 2 dimensional problem using graphical method? Explain.

12. (a) Write a algorithm for MODI method (transportation algorithm).

(or)

12. (b) Write a algorithm for Hungarian method.

13. (a) Write the basic rules for network construction? Describe it.

(or)

13. (b) Bring out the basic difference between PERT and CPM. Explain it.

14. (a) Write short notes on individual and group replacement.

(or)

14. (b) Mention and explain what are the basic terms used in sequencing.

15. (a) Describe the concept of Kendall's notation in detail.

(or)

15. (b) Discuss the fundamental components of queuing system.

Part – C **(5 X 7 = 35 Marks)**

Answer ALL Questions

Each answer should not exceed 600 words or three pages

16. (a) Explain the essential characteristics and limitations of linear programming problem.

(or)

16. (b) Describe simplex method of solving linear programming problem.

17. (a) Write algorithms for LCEM and NWCR.

(or)

17. (b) What is the assignment problem? What are the mathematical formulations used in AP. Explain in detail.

18. (a) Explain the PERT procedure to determine the expected critical path, expected variance of the project length and probability of completing the project within a specified time.

(or)

18. (b) Discuss on CPM.

19. (a) Explain replacement theory.

(or)

19. (b) How to processing the jobs through number of machines in sequencing? Explain.

20. (a) Explain and derive an expression for steady state probability of n customers in the system.

(or)

20. (b) Show that the average number of units in a (M/M/1) queuing system is equal to $\rho(1-\rho)$.