

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

MBA II Year I Semester (R16) Supplementary End Semester Examinations – OCTOBER 2021
OPERATIONS RESEARCH

Time: 3Hrs

Max Marks: 50

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part A or Part B only. Q.no 6 which is a case study is compulsory.

- Q.1(A) Solve the L.P.P. graphically: $Min.Z = 3x_1 + 5x_2$ 8 M
Subject to $x_1 \leq 4$; $2x_2 \leq 6$; $3x_1 + 2x_2 \leq 18$; $x_1 + x_2 \leq 9$; $x_1, x_2 \geq 0$

OR

- Q.1(B) Explain the scope of Operations Research in detail. 8 M

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- Q.2(A) Find the optimum transportation cost for the following Transportation problem: 8 M

	D1	D2	D3	D4	Availability
P1	19	30	50	12	7
P2	70	30	60	20	10
P3	40	10	60	20	18
Requirement	5	8	7	15	35

OR

- Q.2(B) Explain the Hungarian method of solving Assignment problem. 8 M

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- Q.3(A) An operator should perform two operations turning and threading. The time required to perform these operations for each job is known. Determine the order in which the jobs should be processed in order to minimize the total time required to turn out all the jobs. 8 M

Job	1	2	3	4	5	6	7	8	9
Time for turning	2	5	4	9	6	8	7	5	4
Time for threading	6	8	7	4	3	9	3	8	11

OR

- Q.3(B) Explain the terms i) Two-Person zero-sum games ii) Pay-off matrix iii) Minimax-Maxmin principle and iv) Saddle point and value of the game. 8 M

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- Q.4(A) A firm is considering replacement of a machine, whose cost price is Rs.12, 200, and the scrap value Rs.200. The running costs in Rs are found from experience to be as follows: 8 M

Year	1	2	3	4	5	6	7	8
Running cost	200	500	800	1200	1800	2500	3200	4000

What should the machine be replaced?

OR

- Q.4(B) Define Simulation. Explain the types of Simulation in detail. 8 M

Q.5(A) Explain i) Critical Path Method and ii) PERT 8 M

OR

Q.5(B) In a railway marshalling yard, goods trains arrive at a rate of 30 trains per day. Assuming that the inter-arrival time follows an exponential distribution and the service time also exponential with an average 36 minutes. Calculate 8 M

i) the mean queue size and

ii) the probability that the queue size exceeds 10.

Q.6

CASE STUDY

10 M

The following table gives the activities of construction project and duration:

Activity	1-2	2-3	2-4	3-5	3-6	4-6	4-7	5-8	6-8	7-8
Duration (days)	2	3	5	4	1	6	2	8	7	4

Draw the network for the project. Find the critical path and project duration.

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SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Time: 3Hrs

Max Marks: 50

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either Part A or Part B only. Q.no 6 which is a case study is compulsory.

Q.1(A)	Describe the different objectives of financial investment.	8M
OR		
Q.1(B)	Discuss in detail about the stock exchanges in India.	8M
Q.2(A)	Write an essay on fundamental analysis of stocks in India.	8M
OR		
Q.2(B)	What is technical analysis? Explain various technical charts in technical analysis?	8M
Q.3(A)	What is Primary and Secondary market? Describe the Market participants of the secondary market.	8M
OR		
Q.3(B)	A Bond par value is Rs 1000. Interest rate is 10 per cent, and now it is currently sold for 900 and matures in 8 years with a maturity value of Rs 1100. Calculate Yield to Maturity (YTM) by using trial and error method	8M
Q.4(A)	What is meant by portfolio management? Discuss the elements of portfolio management	8M
OR		
Q.4(B)	From the following information calculate the expected rate of return of a rportfolio. Risk free rate is 8 % Expected return of market portfolio is 18 %, Standard deviation of an asset is 2.8 %, Market standard deviation is 2.3 % correlation coefficient of portfolio is 0.8 calculate expected rate of return	8M
Q.5(A)	Explain the basic assumptions of Markowitz efficient frontier theory.	8M
OR		
Q.5(B)	From the following information calculate Treynor's Measure, Jensen's Measure and Sharpe's measure of portfolio performance when average return on portfolio is 19 %, Market return 18 %, Risk free rate of return is 12 %, Standard deviation = 14 %, Beta of Portfolio is 0.95 and Beta of Market is 1	8M
Q.6	Case Study	10M
	From the following information of security Alpha and Gama you are require to calculate	
	1. Individual return of each security	
	2. Individual Risk of each security	
	3. Covariance of Alpha and Gama	
	4. Correlation of Alpha and Gama	
	5. Portfolio return with a proportionate of 60 % of Alpha and 40 % Gama	
	6. Portfolio Risk	

Year	Alpha	Gama
2010	18 %	10 %
2011	15 %	20 %
2012	12 %	22 %
2013	18 %	10 %
2014	15 %	15 %

*****END*****