MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MBA II Year I Semester (R16) Supplementary End Semester Examinations – OCT 2020

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)   Discuss the applications and characteristics of operations research.   8M

OR

Q.1(B)   Solve the following L.P.P. by two-phase Simplex method: $Max.Z = 2x_1 + x_2$ 8 M

Subject to $x_1 + x_2 \geq 2$, $x_1 + x_2 \leq 4$, $x_1, x_2 \geq 0$

Q.2(A)   Solve the following transportation problem where cell entries are unit costs.   8 M

	D_1	D_2	D_3	D_4	D_5	Available
S_1	68	35	4	74	15	18
S_2	57	88	91	3	8	17
S_3	91	60	75	45	60	19
S_4	52	53	24	7	82	13
S_5	51	18	82	13	7	15
Required	16	18	20	14	14	82

OR

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

Q.3(A)   Find the sequencing that minimizes the total elapsed time (hours) required to complete the following jobs on two machines   8 M

Job Number	A	B	C	D	E
Machine-A	5	1	9	3	10
Machine-B	2	6	7	8	4

OR

Q.3(B)   Solve the game with the payoff matrix shown in the following table, using the algebraic method: 8 M

Player A's Strategies	Player B's Strategies		
	B1	B2	B3
A1	7	4	4
A2	3	5	8

Q.4(A)   Discuss the various types of replacement situations.   8 M

OR

Q.4(B)   A bakery keeps stock of a particular brand of cake. The daily demand based on the past experience is given in the following table.   8 M

Daily Demand	0	15	25	35	45	50
Probability	0.01	0.15	0.20	0.50	0.12	0.02

Consider the following sequence of random numbers: 48; 78; 09; 51; 56; 77; 15; 14; 68; 09.
a. Using the sequence, simulate the demand for the next 10 days.

Find the stock situation if the owner of the bakery decides to make 35 cakes every day. Also estimate the daily average demand for cakes on the basis of the simulated data.

Q.5(A)	Explain in detail about the following	8 M

      i)   Critical Path Method
      ii)   PERT

OR

Q.5(B)	A repair shop attended by a single mechanic has an average of 4 customers per hour who bring small appliances for repair. The mechanic inspects them for defects and quite often can fix them right away or otherwise render a diagnosis. This takes him 6 minutes on an average. Arrivals are Poisson and service time has the exponential distribution. You are required to:	8 M

   a.   Find the proportion of time during which the shop is empty;
   b.   Find the probability and finding at least one customer in the shop;
   c.   The average number of customers in the system; and
       The average time, including service, spent by a customer.

Q.6	**Case Study**	10 M

A Company making cool drinks has two bottling plants P_1 and P_2. Each plant produces three drinks; Coca-cola, Thumps up and Sprite and their production capacity per day is shown below:

Cool drink	P_1	P_2
Coca-cola	6000	2000
Thumps up	1000	2500
Sprite	3000	3000

The marketing department of the Company forecasts a demand of 80,000 bottles (cola; 22,000 bottles of Thumps up; and 40,000 bottles of sprite during the month of operating costs per day of plants P_1 and P_2 are Rs.60, 000 and Rs.40,000 respectively number of days for which each plant must be run in June so as to minimize the opera while meeting the marketing demand solve graphically

END

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MBA II Year I Semester (R16) Supplementary End Semester Examinations – OCT 2020
CUSTOMER RELATIONSHIP 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)	Discuss about the significance of customer relationship management to its stakeholders in detail.	8 M
	OR	
Q.1(B)	What is context of relationship management? Explain about the transactional Vs relationship approach of CRM.	8 M
Q.2(A)	Discuss CRM as a strategic marketing tool for effective business decisions.	8 M
	OR	
Q.2(B)	What is customer lifetime value? How customer profit analysis help to understand customers?	8 M
Q.3(A)	Briefly discuss about the CRM process.	8 M
	OR	
Q.3(B)	Discuss in detail about the different CRM models.	8 M
Q.4(A)	Write short notes on i) Data Mining for CRM ii) CRM Software Packages iii) Role of interactive technologies in CRM	8 M
	OR	
Q.4(B)	What are CRM tools? Discuss the operational issues in planning and implementation of CRM.	8 M
Q.5(A)	Discuss about the CRM software packages.	8 M
	OR	
Q.5(B)	Examine the changing trends in CRM.	8 M
Q.6	**Case Study** A major cellular service provider, AIRTEL, hired the service of synergy marketing, an agency specialized in devising the loyalty programmes, to prepare an innovative customer loyalty programmes. The initiatives sought to improve the customer acquisition and retention rates of the cellular phone customers, in a market of fierce competition. The programme implementation calls for an accurate tracking of the customer behavior using control groups – customers like those in the loyalty programme who were not offered membership in the programme. By comparing the behavior of the customer in the loyalty	10 M

programme with those not in the programme, the financial impact of the loyalty programme could be very precisely determined. Since, the programme is not going to be advertised, but informed through the mail to specific customers, a perfect "blind test" of loyalty programme effectiveness can be created in the cellular market.

Questions
1. You have to prepare a communication plan, sample selection, design of the programme.

END

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SECURITY ANALYSIS & 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)	Define investment. What are the characteristics of investment and also explain the criteria for evaluating the investment?	8 M
	OR	
Q.1(B)	Briefly explain about stock exchanges in India.	8 M
Q.2(A)	What is economic analysis and state the economic factors considered for this analysis.	8 M
	OR	
Q.2(B)	What is technical analysis? What are the various theories in technical analysis	8 M
Q.3(A)	How does the systematic risk and unsystematic risk affect the individual stock returns?	8 M
	OR	
Q.3(B)	The James company had the following annual returns over the past seven years. Determine James's Average Return and Standard deviation of Returns over the past	8 M

Years	Return
2001	10 %
2002	-5 %
2003	14 %
2004	-6 %
2005	20 %
2006	18
2007	20

Q.4(A)	Describe the assumptions of CAPM.	8 M
	OR	
Q.4(B)	Consider a portfolio of 300 shares of firm A worth $10/share and 50 shares of firm B worth $40/share. You expect a return of 8% for stock A and a return of 13% for stock B.	8 M

        (a) What is the total value of the portfolio, what are the portfolio weights and what is the expected return?

        (b) Suppose firm A's share price goes up to $12 and firm B's share price falls to $36. What is the new value of the portfolio? What return did it earn? After the price , what are the new portfolio weights?

Q.5(A)   What are the differences between active equity management and passive equity   8 M
           management?

<div align="center">OR</div>

Q.5(B)   How does the risk profile of an investor affect portfolio selection?   8 M

Q.6   10 M

<div align="center">CASE STUDY</div>

An investor has the following information of a bond face value=1000, coupon rate 10%, time to maturity 10 years, market price 1250. Callable in five years=1200
   a. Find the yield to maturity (YTM)
   b. Yield to call (YTC)

<div align="center">***END***</div>