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

MCA II Year II Semester (R16) Regular & Supplementary End Semester Examinations – May 2019
(Regulations: R16)

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 B only

Q.1(A)   Define OR. Discuss the procedure of simplex method.   10M

OR

Q.1(B)   Solve the following LPP by using Two-Phase simplex method   10M
Max. $Z = x_1 - 2x_2 - 3x_3$
Subject to constraints $-2x_1 + x_2 + 3x_3 = 2$, $2x_1 + 3x_2 + 4x_3 = 1$, $x_1, x_2, x_3 \geq 0$

Q.2(A)   Explain the following   10M
      (i)   Mathematical model of transportation problem
      (ii)   Vogel's approximation method
      (iii)   Degeneracy in transportation problem

OR

Q.2(B)   Solve the following salesman problem so as to minimize the cost per cycle.   10M

	To City				
	1	2	3	4	5
1	∞	10	25	25	10
2	1	∞	10	15	2
From City 3	8	9	∞	20	10
4	14	10	24	∞	15
5	10	8	25	27	∞

Q.3(A)   Use the graphical method for solving the following game and find the value of the   10M
game.

	Player B		
Player A	B_1	B_2	B_3
A_1	1	3	11
A_2	8	5	2

OR

Q.3(B)   Find the optimal sequence for the sequencing problem: 10M

Job	1	2	3	4	5	6	7	8
M_1	14	26	17	11	9	26	18	15
M_2	21	15	16	21	22	12	13	25

Find also the minimum total elapsed time and idle times on the machines M_1 and M_2.

Q.4(A) Explain about Monto carlo simulation.   10M

<center>OR</center>

Q.4(B) A decision has to be made for group replacement versus individual replacement policy   10M
        for 500 electric bulbs of a particular make in a university campus. The cost of replacing
        an individual bulb is Rs.55/- and when replaced as group it is Rs.35/-. Find out an
        optimal replacement schedule. Failure rate for the bulbs were recorded as follows:

Month	1	2	3	4	5	6
Probability of failure	0.11	0.30	0.25	0.20	0.09	0.05

Q.5(A) A project schedule has the following characteristics. Construct the network and find   10M
        the critical path and time duration of the project.

Activity	1–2	1–4	1–7	2–3	3–6	4–5	4–8	5–6	6–9	7–8	8–9
Duration (hours)	2	2	1	4	1	5	8	4	3	3	5

<center>OR</center>

Q.5(B) On an average 96 patients per 24 hour-day require the service of an emergency clinic.   10M
        Also on an average, a patient requires 10 minutes of active attention. Assume that the
        facility can handle only one emergency at a time. Suppose that it costs the clinic Rs
        100 per patient treated to obtain an average service time of 10 minutes, and that
        each minute of decrease in this average time would cost Rs 10 per patient treated,
        how much would have to be budgeted by the clinic to decrease the average size of the
        queue from 4/3 patients to 1/2 patient.

<center>*** END***</center>

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MCAII Year II Semester (R16) Regular & Supplementary End Semester Examinations –May2019
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WEB PROGRAMMING THROUGH PHP

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 B only**

Q.1(A)	i) Explain the semantic tags in HTML. ii) Write a PHP program to create one dimensional array.	10M
	OR	
Q.1(B)	Write HTML code to design a form with the following labels. Name of the user, password, gender (Radio button), hobbies (Checkbox for sports/singing/reading), reset (button) and submit (button)	10M
Q.2(A)	i) Explain any five PHP functions with example. ii) Write a PHP program by implementing recursion.	10M
	OR	
Q.2(B)	i) Write a PHP program for implementing passing by value and passing by reference. ii) Discuss about PHP functions for web page templates.	10M
Q.3(A)	i) What is object oriented PHP? Write any PHP program by considering classes, attributes and operations of PHP. ii) Discuss in detail about Exception handling in PHP.	10M
	OR	
Q.3(B)	i) Explain in detail about Inheritance in PHP with examples.	10M
Q.4(A)	i) Discuss on the three levels of database architecture. ii) How to create databases with MySQL identifiers? Explain with an example.	10M
	OR	
Q.4(B)	i)Write a short note on RDBMS ii) Explain importance of MySQL's privilege systems.	10M
Q.5(A)	i) Write a program on MySQL database access from the Web with PHP. ii) Discuss about generating, Parsing and transforming XML.	10M
	OR	
Q.5(B)	Discuss and Write a PHP program with MySQL to check authentication of the users by entering username and password credentials to do secure transactions.	10M

*** END***

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NETWORK SECURITY ESSENTIALS AND STANDARDS

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 B only

Q.1(A)	Explain the OSI reference model in detail with a neat diagram	10M
	OR	
Q.1(B)	i. Write short notes on: Viruses, Worms and Trojan Horses.	5M
	ii. What are the measures to be taken into account while using todays' computer networks?	5M
Q.2(A)	Write in detail about MD5 and SHA-1 algorithms.	10M
	OR	
Q.2(B)	Explain Data Encryption Standard (DES) algorithm with a neat diagram.	10M
Q.3(A)	Write a detailed notes on Passwords as Cryptographic Keys.	10M
	OR	
Q.3(B)	Write short notes on: (i) Key Distribution Center (KDC)	5M
	(ii) Certificate Revocation	5M
Q.4(A)	Explain the following Concepts: i. Public Key Infrastructure with a neat diagram	5M
	ii. Kerbros version 5	5M
	OR	
Q.4(B)	Explain the Authentication Header protocol in IP Security.	10M
Q.5(A)	Illustrate various message formats available in PEM.	10M
	OR	
Q.5(B)	Write short notes on PEM and PGP protocols in email security.	10M

*** END***

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E-BUSINESS

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 B only

Q.1(A) What is e-Business strategy? Explain the considerations to be kept in mind while framing a E-business strategy.   10M

OR

Q.1(B) Explain the different types of E-business models.   10M

Q.2(A) What is E-Market? Explain the different factors influencing the E-Market success.   10M

OR

Q.2(B) Explain the different types of e-procurement models.   10M

Q.3(A) List the primary advantages of the RMI approach for application integration.   10M

OR

Q.3(B) What are the types of distributed-object middleware and describe the relationships among them.   10M

Q.4(A) Explain the strategies for modernizing legacy systems.   10M

OR

Q.4(B) What are the challenges faced by e-business integration?   10M

Q.5(A) What are web services? Explain the differences between web services and web-based applications used in support of e-business.   10M

OR

Q.5(B) Explain the five layer model of e-business infrastructure.   10M

*** END***