

Hall Ticket No:

Question Paper Code: 16MCA111

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE**

(UGC-AUTONOMOUS)

**MCA(2Y) I Year II Semester (R16) Supplementary End Semester Examinations – June 2019**

(Regulations: R16)

**JAVA PROGRAMMING**

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 briefly the following object oriented concepts. 10M  
a) Abstraction  
b) Polymorphism  
ii) "Java is called Machine Independent language" - Justify this statement with proper explanation.

**OR**

- Q.1(B) i) Write a Java program to check whether a given number is palindrome or not? 10M  
ii) Explain about Java Tokens with examples.

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- Q.2(A) i) What are the different forms of inheritance? Explain. 10M  
ii) How Packages differ from Interfaces? Explain it with a suitable example program to calculate student marks statement.

**OR**

- Q.2(B) i) What is meant by interfaces in java? Why interfaces are necessary explain. 10M  
ii) Write a Java program to find the area and perimeter of square and circle using interface.

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- Q.3(A) Explain how communication between threads takes place with a programming example. 10M

**OR**

- Q.3(B) What is meant by Auto Boxing? Discuss in detail. 5M  
What is meant by Unboxing? Illustrate with example 5M

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- Q.4(A) What is a stream? What is the difference between byte streams and character streams? How are they used to capture input from the user? 10M

**OR**

- Q.4(B) i. Write short notes on URLConnection and URI Class. 5M  
ii. Write briefly about Datagrams 5M

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- Q.5(A) i) Explain clearly the following components of AWT with suitable examples each 10M  
a) Button  
b)Text Area  
ii) Write a program to create a window and set its title with "MITS" using AWT

**OR**

- Q.5(B) Write a program to handle mouse events and mouse motion events. 10M

**\*\*\* END\*\*\***

Hall Ticket No:

Question Paper Code: 16MCA402

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(UGC-AUTONOMOUS)

**MCA(2Y) I Year II Semester (R16) Supplementary End Semester Examinations – June 2019**

(Regulations: R16)

**WEB TECHNOLOGIES THROUGH JAVA**

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) Describe how HTML and CSS complement each other in building rich WebPages? 10M

OR

Q.1(B) Write a script illustrating java script events with an example. 10M

Q.2(A) What is DTD? Explain the difference between external DTD and internal DTD. 10M

OR

Q.2(B) Write Short notes on Datagram and Inet Address 10M

Q.3(A) How many common mechanisms used for session tracking? Explain how the concept of cookies and Http session are used in the session management? 10M

OR

Q.3(B) i) Narrate the major range of http status codes along with their purpose. 10M  
ii) Write a java servlet program to demonstrate auto web page refresh by displaying current date and page.

Q.4(A) Write a JSP program to read data from HTML form (Gender data from radio buttons and colours data from check boxes) and display. 10M

OR

Q.4(B) What are JSP documents? Explain in detail about scriplets. 10M

Q.5(A) i) Explain the following JDBC data types 10M

a) BLOB

b) CLOB

ii) What is the advantage of using add Batch() and execute Batch() methods in JDBC.

OR

Q.5(B) Explain Prepared statement object with an example java program. 10M

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Question Paper Code: 16MCA407

**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE**  
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**MCA(2Y) I Year II Semester (R16) Supplementary End Semester Examinations – June 2019**  
(Regulations: R16)

**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) i) Write short notes on packet switching. 5M  
ii) Distinguish between UDP and TCP. 5M  
**OR**
- Q.1(B) Explain in detail about Multi-Level model of security. 10M
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- Q.2(A) i) What is the purpose of Mangler function in Data Encryption Standard (DES)? 5M  
ii) What are the primitive operations of Advanced Encryption Standard (AES)? 5M  
**OR**
- Q.2(B) Write an algorithm for Digital Signature Standard (DSS). 10M
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- Q.3(A) i) Compare Off-Line Vs On-Line password guessing. 5M  
ii) Describe the delegation. 5M  
**OR**
- Q.3(B) Explain in detail about Cryptographic Authentication Protocols. 10M
- 
- Q.4(A) Discuss in detail the message formats of Kerberos V5. 10M  
**OR**
- Q.4(B) Write short notes on following: 5+5  
i) Authentication Header of IPsec: AH and ESP M  
ii) Attacks fixed in v3 of SSL/TLS
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- Q.5(A) i) In electronic mail, explain the concept of verifying, whether the message was really sent or not. 5M  
ii) Discuss the anomalies in Pretty Good Privacy (PGP). 5M  
**OR**
- Q.5(B) Write in detail about S/MIME certificate hierarchy. 10M

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**MCA(2Y) I Year II Semester (R16) Supplementary End Semester Examinations – June 2019**  
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**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) A company has three operational departments with capacity to produce three different types of cloths yielding a profit of Rs.2, Rs. 4 and Rs.3 per meter respectively. One meter of suiting requires 3 minutes in weaving, 2 minutes in processing and 1 minute in packing. One meter of woollen requires 3 minutes in each department. In a week, total run time of each department is 60, 40 and 80 hours for weaving, processing, packing respectively. Solve the above as a linear programming problem by graphical method. 10M

OR

Q.1(B) Solve the following L.P.P. by two-phase Simplex method: 10M  

$$Max.Z = 2x_1 + x_2$$
 Subject to  $x_1 + x_2 \geq 2, x_1 + x_2 \leq 4, x_1, x_2 \geq 0$

Q.2(A) Explain the MODI's algorithm for solving transportation problem. 10M

OR

Q.2(B) Consider the problem of assignment five jobs to five persons. The assignment costs are given below. Determine the optimal assignment schedule: 10M

		1	2	3	4	5
A	[	8	4	2	6	1
B		0	9	5	5	4
C		3	8	9	2	6
D		4	3	1	0	3
E		9	5	8	9	5

Q.3(A) Solve the following game using Dominance property: 10M

		Player B			
Player A	[	3	5	4	2
		5	6	2	4
		2	1	4	0
		3	3	5	2

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. 10M

Q.4(A) A firm is considering replacement of a machine, whose cost price is Rs.12, 200, and the scrap 10M

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

value Rs.200. The running costs in Rs are found from experience to be as follows:  
What should the machine be replaced?

OR

Q.4(B) A truck owner finds from his past records that the maintenance costs per year ,of a truck 10M  
whose purchase price is Rs.8,000, are as given below:

Year	1	2	3	4	5	6	7	8
Running cost (Rs.)	1,000	1,300	1,700	2,200	2,900	3,800	4,800	6,000
Resale value (Rs.)	4,000	2,000	1,200	600	500	400	400	400

Determine at which time it is profitable to replace the truck.

Q.5(A) In a railway marshalling yard, goods trains arrive at a rate of 30 trains per day. Assuming that 10M  
the inter-arrival time follows an exponential distribution and the service time also exponential with an average 36 minutes. Calculate

- i) the mean queue size and
- ii) the probability that the queue size exceeds 10.

OR

Q.5(B) A small project is composed of seven activities whose time estimates in weeks are given 10M  
below:

Activity	1-2	1-3	1-4	2-5	3-5	4-6	5-6
Optimistic time	1	1	2	1	2	2	3
Most likely time	1	4	2	1	5	5	6
Pessimistic time	7	7	8	1	14	8	15

Find the critical path. What is the probability that the project will be completed at least four weeks earlier than expected?

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