Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 18MATP114

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R18) Supplementary End Semester Examinations – Jan' 2020

(Regulations: R18)

PROBABILITY & STATISTICS

Time: 3Hrs **Max Marks: 60**

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) Define Conditional probability. State and prove multiplication rule. 12M

(ii) When a computer goes down, there is a 75% chance that it is due to an overload and a 15% chance that is due to software problem. There is an 85% chance that it is due to an overload or a software problem. What is the probability that both of these problems are at fault? What is the probability that there is a software problem but no overload?

OR

Q.1(B) Let X denote, the number of holes that for can be drilled per bit. The density for X is given the following table: 12M

x	1	2	3	4	5	6	7	8
$f(x)$	0.02	0.03	0.05	0.2	0.4	0.2	0.07	$f(8)$

(i)Find $f(8)$ (ii) Find the table for F (iii) Use F to find the probability that a randomly selected bit can be used to drill between three and five holes inclusive and (iv) Find $p(X \le 5)$ and $p(2 \le X < 5)$.

Q.2(A) For the following bivariate probability distribution, find (i) E(X), (ii) E(Y), (iii) E(XY) and (iii) Cov(X, Y). 12M

X\Y	0	1	2	3
0	0.840	0.030	0.020	0.010
1	0.060	0.010	0.008	0.002
2	0.010	0.045	0.032	0.013

OR

Q.2(B) Find the correlation between X and Y for the following data. 12M

Enzyme Level (X)	95	110	118	124	145	140	185	190	205	222
Detoxification Level (Y)	108	126	102	121	118	155	158	178	159	184

Q.3(A) Find the Moment generating function of binomial distribution and then find mean and variance. 12M

OR

Q.3(B) Among diabetic, the fasting blood glucose level X may be assumed to be approximately normally distributed with mean 106 milligrams and S. D. 8 milligrams. Find the probability that randomly selected diabetic will have blood glucose level (i) less than 90 mg (ii) between 90 and 122 mg (iii) over 122 mg. and (iv) find the point that has the property that 25% of all diabetic have a fasting glucose level of this value or lower. 12M

Q.4(A) (i) Explain test of significance for single proportion? (6+6)M
(ii) The means of simple samples of sizes 1000 and 2000 are 67.5 and 68.0 cms. Respectively. Can the samples be regarded as drawn from the same population of S.D. 2.5 cm.?

OR

Q.4(B) The 9 items of a sample have the following observations: 45, 47, 50, 52, 48, 47, 49, 53, 51. Does the mean of theses differ significantly from the assumed mean of 47.5 ? 12M

Q.5(A) Explain ANOVA with One –way classification. 12M

OR

Q.5(B) Four doctors each test four treatments for a certain disease and observe the number of days such patient takes to recover. The results are as follows (recovery time in days): 12M

DOCTOR	TREATMENTS			
	1	2	3	4
A	10	14	19	20
B	11	15	17	21
C	9	12	16	19
D	8	13	17	20

Test whether there is any significant difference between
(i) doctors and (b) treatments

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 18MCAP103

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R18) Supplementary End Semester Examinations – Jan' 2020

(Regulations: R18)

PROGRAMMING IN C

Time: 3Hrs **Max Marks: 60**

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 different types of operators available in 'C' language in detail.	8M
	ii. Explain implicit and explicit type conversions in brief.	4M
	OR	
Q.1(B)	i. Define data type? Discuss different data types in C.	6M
	ii. Write about 'C' character set and Keywords.	6M
Q.2(A)	i. Explain switch statement with an example.	6M
	ii. Describe while and do-while loop with example each.	6M
	OR	
Q.2(B)	i. Explain go-to branching control structure.	6M
	ii. Write about break and continue statements with suitable examples.	6M
Q.3(A)	i. What is array? Explain multi-dimensional array with suitable example.	6M
	ii. Differentiate between call by value and call by reference.	6M
	OR	
Q.3(B)	i. Describe recursive function in detail.	6M
	ii. Write a C program for finding factorial of a given number using recursive technique.	6M
Q.4(A)	i. Explain pointer to an array with an example.	6M
	ii. Explain the process of passing pointer and array as an argument to a function.	6M
	OR	
Q.4(B)	i. How would you summarize the declaration and initialization of structure?	6M
	ii. Give an example of structure.	6M
Q.5(A)	Write a C program to read a text file and display all the characters in a file in capital letters.	12M
	OR	
Q.5(B)	Write in detail about low-level programming.	12M

***** END*****

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 18MCAP104

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R18) Supplementary End Semester Examinations – Jan' 2020

(Regulations: R18)

DATABASE MANAGEMENT SYSTEMS

Time: 3Hrs **Max Marks: 60**

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 difference between logical and physical data independence. ii. What are the responsibilities of a DBA	6+6 M
	OR	
Q.1(B)	Discuss the different notations used in E-R diagram. Draw an Entity Relation diagram for the Hospital Management System. Consider the different types of Patients with respect to Disease and In-Patient and Out-Patient Department in the design. Consider the availability of all well qualified Doctors. Consider various types of tests and operations to be conducted. Explain the mapping cardinality used. Assume suitable attributes. Use generalization and Specialization	12M
Q.2(A)	i) Consider the following schema: Suppliers(sid: integer, sname: string, address: string) Parts(pid: integer, pname: string, color: string) Catalog(sid: integer, pid: integer, cost: real) The Catalog relation lists the prices charged for parts by Suppliers. Write the following queries in SQL: a. Find the pnames of parts for which there is some supplier. b. Find the snames of suppliers who supply every part. c. Find the snames of suppliers who supply every red part. d. Find the pnames of parts supplied by Acme Widget Suppliers and no one else. e. Find the sids of suppliers who charge more for some part than the average cost of that part (averaged over all the suppliers who supply that part). f. Find the sids of suppliers who supply a red part and a green part.	2*6= 12M
	OR	
Q.2(B)	What is Relational Algebra? List all the relational algebra operators. Explain following operations: SELECT, PROJECT, UNION, CARTESIAN	12M
Q.3(A)	i. Differentiate BCNF with 3rd normal form. ii. Explain about denormalization.	(6+6) M
	OR	
Q.3(B)	Explain about Multi-valued dependencies and Fourth Normal Form.	12M
Q.4(A)	i. Explain about Serializability. ii. Explain different types of locks.	(6+6) M
	OR	
Q.4(B)	Discuss the different modes of failures and Explain any one method of the Recovery System	12M
Q.5(A)	What are Triggers? Explain the different types of Triggers using suitable example	12M
	OR	
Q.5(B)	What is NoSQL database and explain the features of Nosql database?	12M

*** END***