

Subject Code: R16MCA101

MCA - I Semester Regular Examinations, Dec - 2017

C PROGRAMMING AND DATA STRUCTURES

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory
Four Questions should be answered from Part-B

PART-A

1.
 - a) What is the syntax of nested if statement
 - b) Define a recursive function. Give an example
 - c) What are the basic operations for creating a linked list?
 - d) What is mean by call by reference & call by value
 - e) State various internal sorting algorithms
 - f) What is the purpose of prim's and kruskal algorithms?

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) What are various conditional statements? Explain the difference between nested if and switch case statement by taking suitable examples. [6+6]
(b) Write a program to find the factorial of a given number of your choice
3. (a) What is multidimensional array? Write a 'C' language program to find the transpose of a given matrix [6+6]
(b) Discuss any four string handling functions in C
4. (a) What is a storage class? Discuss in detail about different storage classes with suitable examples. [6+6]
(b) What is call by value? How it is different from call by reference? Write and explain 'C' language program to implement the concept of call by value and call by reference.
5. (a) Differentiate between a structure and a union. Explain in detail using suitable example program for each. [6+6]
(b) Explain the following
 - i) getc()
 - ii) putc()
 - iii) fgetc()
6. (a) Explain how linear search is different from binary search? Write a 'C' language program to implement the concept of binary search. [6+6]
(b) Write a C program for merge sort
7. (a) Explain how insertion and deletion can be done in a linked list [6+6]
(b) Write an algorithm to convert an infix expression into post postfix expression. Use the example expression ((A+B) * C- (D-E)) + (F+G) for analysis



Subject Code: R16MCA102

MCA - I Semester Regular Examinations, Dec - 2017

COMPUTER ORGANIZATION

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory
Four Questions should be answered from Part-B

PART-A

1. (a) Give equivalent decimal number for $0111\ 1010_2$
- (b) Draw Full adder using Half Adders
- (c) What is Indirect addressing?
- (d) What are micro operations?
- (e) Give Micro instruction format.
- (f) What is Virtual Memory?

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) Explain fixed point representation methods 6M
- (b) Explain Binary to Hexadecimal, Octal and decimal conversations with examples 6M
3. (a) Explain design of Multiplexer with example 6M
- (b) Explain RS Flip Flop and T-Flip Flops with examples 6M
4. (a) Explain register stack and memory stack with examples 6M
- (b) Explain Arithmetic Micro operations 6M
5. (a) Draw and explain micro program control unit 6M
- (b) Illustrate a micro program with example 6M
6. (a) Explain address mapping using pages in virtual memory 6M
- (b) Distinguish isolated versus and memory mapped I/O 6M
7. (a) Discuss addressing modes 6M
- (b) Discuss instruction formats 6M



Narasaraopeta Engineering College (Autonomous)
Kotappakonda Road, Yellamanda (P.O), Narasaraopet- 522601, Guntur District, AP.

Subject Code: R16MCA103

Supply &

MCA - I Semester Regular Examinations, Dec-2017.

MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE

Time: 3 hours

Max Marks: 60

Question Paper Consists of Part-A and Part-B
Answering the question in Part-A is Compulsory
Four Questions should be answered from Part-B

PART-A

1. (a) What is meant by Tautology? Explain with an example.
(b) Let $A = \{\{b, c\}, \{\{b\}, \{c\}, b\}$ and $B = \{a, b, c\}$. then find $A \cap B$, $A \cup B$, $A - B$
(c) Define Group.
(d) Explain Sum Rule with an example.
(e) Discuss the applications of Generating functions.
(f) Define Graph.

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) Obtain the principal disjunctive and conjunctive normal forms of the formula $(P \vee Q) \leftrightarrow (P \wedge Q)$.
(b) Prove or disprove the validity of the following arguments
All dogs are carnivorous.
Some animals are dogs.
Therefore, some animals are carnivorous.
[6+6]
3. (a) Define the inverse function. Show that the function $f(x) = x^5$ and $g(x) = x^{\frac{1}{5}}$ for $x \in \mathbb{R}$ are inverse of one another.
(b) Explain the construction of Hasse Diagram.
[8+4]
4. (a) A non-empty subset H of a group G is a subgroup of G if and only if $ab \in H$ and $a^{-1} \in H$.
(b) Let $G = \{x | -1 < x < 1\}$. Define a binary relation on G by $a * b = \frac{a+b}{1+ab}$. Show that $(G, *)$ is a group.
[6+6]
5. (a) Determine the number of integers between 1 and 250 that are divisible by any of the integers 2, 3, 5, 7.
(b) How many different strings can be made from the letters in MISSISSIPPI, using all the letters?
[6+6]
6. (a) Solve the recurrence relation $a_n - 7a_{n-1} + 12a_{n-2} = 0$ for $n \geq 2$ where $a_0 = 0$ and $a_1 = 1$ by characteristic method.
(b) Solve the Recurrence Relation $a_{n-2} = 3a_{n-1} - 2$, $a_0 = 3$ $a_1 = 5$?
[6+6]

7. (a) Explain the Kruskal's algorithm with an example.

(b) Draw the binary tree whose level order indices are { 1,2,4,5,8,10,11,20 } [6+6]



Subject Code: R16MCA104

MCA - I Semester Regular Examinations, Dec-2017.
PROBABILITY AND STATISTICAL APPLICATIONS

Time: 3 hours

MaxMarks:60

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory
Four Questions should be answered from **Part-B**

PART-A

1. (a) State the Baye's theorem
(b) Define Poisson distribution
(c) How many different samples of size 3 from finite population of size 10
(d) Write any two chief characteristics of the normal distribution
(e) Describe about Type-II error
(f) Define the test statistic F

[2M+2M+2M+2M+2M+2M]

PART-B

2. (b) A card is drawn from a well shuffled pack of cards. What is the probability that is either a spade or an ace. [6M]
(a) There are two boxes, in box I, 11(eleven) cards are there numbered 1 to 11 and in box II, 5 cards are there numbered 1 to 5. A box chosen and a card is drawn. If card shows an odd number then another card is drawn from the same box. Find the probability that (i) both are even (ii) both are odd [3M+3M]
3. (a) For the continuous probability function $f(x) = kx^2e^{-x}$ when $x \geq 0$, Find (i) k (ii) Mean (iii) Variance. [2M+2M+2M]
(b) Find the probability of getting a total of 5 at least once in three tosses of pair of fair dice. [6M]
4. A random sample of size 64 is taken from a normal population with mean 51.4 and S.D is 68. What is the probability that the mean of the sample will
(a) exceed 52.9 (b)fall between 50.2 and 52.3 [6M+6M]
5. (a) Write the Brief Procedure of Testing of Hypothesis. [6M]
(b) A sample of 64 students have a mean weight of 70 kgs. Can this be regarded as a sample from a population with mean weight 56 kgs and standard deviation 25kgs. [6M]

6. A pair of dice are thrown 360 times and the frequency of each sum is indicated below:

sum	2	3	4	5	6	7	8	9	10	11	12
frequency	8	24	35	37	44	65	51	42	26	14	14

Would you say that the dice are fair on the basis of the Chi-square test at 0.05 level of significance. [12M]

7. Describe the Characteristics of finite Capacity, Single Server Poisson Queue Model -I

[12M]



Narasaraopeta Engineering College (Autonomous)
Kotappakonda Road, Yellamanda (P.O), Narasaraopet- 522601, Guntur District, AP.

Subject Code: R16MCA105 MCA - I Semester Regular Examinations, Dec – 2017.

ACCOUNTS AND FINANCIAL MANAGEMENT

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**
Answering the question in **Part-A** is Compulsory
Four Questions should be answered from **Part-B**

PART-A

1. (a). What is GAAP?
- (b) Uses of accounting information.
- (c) Classification of ratio.
- (d) Importance of Costing?
- (e) What is Sales Budget?
- (f) What is Transaction Files?

[2+2+2+2+2+2]

PART-B

2. Journalise the following Transactions.

[6+6]

- (a)
 - i) Krishna Commenced Business with cash 400000/-
 - ii) Purchase goods from Abhi 30000/-
 - iii) Goods sold for cash 50000/-
- b)
 - i) Stationery expenses paid 3000/-
 - ii) Paid cash to Abhi 29000/- for full settlement.
 - iii) Sold goods to Kiran 6000/-.

3. Prepare final accounts of **Madhu Enterprises** for the year ending 31-12-2002 from the following information

Particulars	Debit Rs.	Credit Rs.
Sales		1,60,000
Purchases	78,000	
Sales return	2,700	
Purchases returns		3,600
Discount received		1,250
Discount allowed	1,850	
Opening Stock	6,675	
Salaries	23,000	
Electricity and gas	1,500	
Rent and Rates	1,000	
Sundry Expenses	2,350	
Premises	50,000	
Office equipment	50,000	
Vehicle	10,750	
Debtor	11,420	
Bank over draft		425
Cash	60	
Creditors		7,750
Capital		55,000
Drawings	5,220	
Long term loan		16,500
Total	2,44,525	2,44,525

Adjustments:

- Closing Stock Rs.15, 000
 - Out standing salaries Rs. 2,000.
 - Pre-paid rent and rates Rs. 1,000.
 - Provide depreciation on office equipment at 10% per annum.
- What do you mean by Ratio Analysis? Explain its advantages and disadvantages.
 - Define financial accounting. Distinguish between financial accounting and cost accounting?
 - What is standard costing? Explain about material variance and labour variance.
 - Write a detail note on Computerized Accounting System and logic & codes

Narasaraopeta Engineering College (Autonomous), Narasaraopet
Department of MCA
Academic Year 2017-2018 (ODD Semester)
External Examination

Year & Sem : I st year & 1st Sem

Date:

Subject Code & Name: R16MCA1MNC

Duration: 180 min

Name of the Student:

Hall Ticket No: _____

I. Find the relationship between the following words 10x1=10M

1. Earth is to Live as Oxygen is to

- a. Breathe b. Mouse c. Swan d. Drink

2. Tailor is to Stitch as Musician is to

- a. Love b. Perch c. Entertain d. Wither

3. Upset is to Disappoint as Happy is to

- a. Enjoy b. Jubilant c. Suffer d. Sip

4. Thermometer is to measure Heat as Speedometer is to

- a. Distance b. Speed c. Kms d. Miles

5. Book is to read as Music is to

- a. Upset b. Train c. Listen d. Create

6. Horse is to Mare as He- Buffalo is to

- a. Tigress b. She - Buffalo c. Cub d. Lioness

7. Tiger is to Cub as Lion is to

- a. Stallion b. Stable c. Pigling d. Cub

8. Botany is to Plants as Zoology is to

- a. Herbs b. Shrubs c. Animals d. Reptiles

9. Tailor uses Needle. Soldier uses

- a. Gun b. Stick c. Spade d. Harrow

10. Fan Oscillates is to Pendulum is to

- a. Swings b. Oscillates c. Types d. Edits

II. Find the odd man out from the following

10x1=10M

- | | | | |
|-----------------|------------------|-----------------|--------------|
| 1. a. A/C | b. Cooler | c. Refrigerator | d. Oven |
| 2. a. Doctor | b. Lawyer | c. Businessman | d. Teacher |
| 3. a. Physics | b. Economics | c. History | d. Geography |
| 4. a. Crocodile | b. Snake | c. Lizard | d. Tiger |
| 5. a. KCR | b. Indira Gandhi | c. Priyanka | d. Nehru |
| 6. a. Cow | b. buffalo | c. Goat | d. Ox |
| 7. a. Gun | b. Hunter | c. Rifle | d. Pistol |
| 8. Rabbit | b. Cat | c. Dog | d. Frog |
| 9. a. Beautiful | b. Handsome | c. Charm | d. Analogy |
| 10. a. Cost | b. Price | c. Fair | d. Value |

III. Rewrite the following sentences in right form

10x1=10M

1. I am liking you.
2. Umas is suffering in fever?
3. They does live in India.
4. You speak English good.
5. I did not meet nobody.
6. My passport ready is?
7. What is your good name?
8. I just completed the food long back.

9. She married with Mr. Ram
10. What is the time from your watch?
11. Does you think that works?
12. I will be had happy.
13. She is writing a test since morning.
14. I did not have no knowledge about that incident.
15. Happy I am with you?
16. The come to college in bus.
17. Uday has had a good boy.
18. She did it on her own only.
19. Are where you?
20. Every students like the teacher.

IV. Read the passage and answer the questions.

5X 2 = 10 Marks

Money is what you use to buy things. You may earn money from completing household chores, getting good grades, for your allowance, or for losing a tooth! Money is very important in our world and comes in many different forms.

People have been using money for hundreds of years. Before money gave specific values for things, people simply traded items. In the United States, we use the dollar as our currency or money, but people in different parts of the world use different currencies, though some countries also use or accept our dollars.

People earn money from the jobs they work and use that money to save for the future or pay for their houses, cars, food, taxes, medical needs, and household items, among other things." Even things such as turning the lights on, using the air conditioning or heat, and connecting to the internet cost money.

1. The dollar..... []
 - a. Is not used very much in the united states.
 - b. Is used in every country in the world.
 - c. Is used in the united states.

- d. Is never used in other countries.
2. According to the author of this story, money is _____. []
- Only earned by adults
 - Only used in America
 - Very important
 - Not very important
3. What did people do before there was money? []
- People traded to get what they needed
 - The story doesn't tell
 - They made everything themselves
 - They just never got what they needed
4. How long have people used money? []
- Hundreds of years
 - Since the beginning of time
 - Thousands of years
 - They started recently
5. Select all of the things that money might be used for. []
- To pay you for doing your chores
 - To pay bills
 - To save for the future
 - To buy things

V. Provide appropriate prepositions for the following passage. 5 x 1 = 5 m

When I am ____ bus stop, somebody asked me what is the time ____ your watch. I replied it is 6' o' clock. Afterwards that gentleman was busy ____ his mobile. I was shocked ____ the usage of technology at that age. It is true that now a days, older generation also developing interest ____ latest technology.

Use suitable articles.

5 x 1 = 5 m

She is ____ untidy girl. John has come without ____ umbrella. How blue ____ sky looks? Draw ____ map of India. Copper is ____ useful metal.

VI. Complete the following sentences using an appropriate word 5 X 1 = 5 M

1. She her child on the doorstep.
- abdicated
 - abated
 - abandoned

2. He was at forgetting his wedding anniversary.
 - a. abased
 - b. abashed
 - c. absolved
3. The nomads danced with
 - a. abdication
 - b. abandon
 - c. abeyance
4. He led an life for years before turning his thoughts inwards.
 - a. abdicated
 - b. abandoned
 - c. abated
5. The wind after the rains.
 - a. abased
 - b. abolished
 - c. abated

VII. Identify and choose the answer for the following Phrasal verbs 5 x1 = 5M

1. Take to Task

- (a) Forgive (b) Educate (c) Begin (d) Punish

1. Carry Out

- (a) Execute (b) Continue (c) Destroy (d) Neglect

3. Go Through

- (a) Examine (b) Continue (c) Exceed (d) Follow

4. Go Together

- (a) Accompany (b) Proceed (c) Follow (d) Agree

5. Look After

- (a) Resemble (b) Search (c) Nurse (d) Examine

