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Paper Code: TMC 101/TMI 101

MCA/ M. Sc. (IT)
Mid Semester Examination 2018
1st Semester

Paper Name: Computer Fundamentals and Programming Methodology Using 'C'

Time: 1:30 Hours

MM: 50

Note:

- (i) This question paper contains two sections.
- (ii) Both sections are compulsory.

Section – A

Q1. Fill in the blanks/True-False

(1 X 5 = 5 Marks)

- a) An identifier in C can consists of character *. [True/False]
- b) Default value of static integer is
- c) Which of the following has highest precedence:
 - I. /
 - II. *
 - III. ()
 - IV. All have equal precedence
- d) In a call to printf() function the format specifier %s can be used to print a string.
[True/False]
- e) The expression is equivalent to a=y+1

Q2. Attempt any five parts.

(3 X 5 = 15 Marks)

- a) Write down the rules for naming a variable.
- b) Define precedence and associativity of operators with example.
- c) What will be the output of following program? Explain your answer.

```
#include <stdio.h>
int main(){
    int a=-4, b;
    b=-a-a+a;
    printf("b=%d",b);
    return 0;
}
```

- d) What will be the output of following program? Explain your answer.

```
#include <stdio.h>
int main(){
    static char a;
    static long b;
    int c;
    c=10;
    printf("%d,%d,%d",a,b,c);
    return 0;
}
```

- e) What are primitive data types in C? Give example.
- f) What do you understand by logical and syntax error?

Section – B

Each question contains three parts a, b & c. Attempt any two parts of choice from each question.

Q3.

(5 X 2 = 10 Marks)

- a. What is meant by compilation? What is meant by interpretation? How do these two processes differ?
- b. Write an algorithm to check whether a 3-digit number is Armstrong or not.
- c. What do you understand by storage classes? Discuss various storage classes of C language.

Q4.

(5 X 2 = 10 Marks)

- a. Discuss the steps followed in order to solve a particular problem.
- b. What is variable initialization and why is it important? What is the difference between the = symbol and == symbol?
- c. Write pseudo code and draw flow chart to print factors of a number.

Q5.

(5 X 2 = 10 Marks)

- a. Explain any five key terms:
keyword, conditional statement, variable, switch statement, comments.
- b. Explain the structure of a C program.
- c. Write an algorithm to print reverse of a number.

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Paper Code: TMC104/TMI102

MCA/M.Sc. (IT)
Mid Semester Examination 2018
1st Semester

Discrete Mathematics/Mathematical Foundation of Computer Science

Time: 1:30 Hours

MM: 50

Note:

- (i) This question paper contains two sections.
- (ii) Both sections are compulsory.

Section – A

Q1. Fill in the blanks/True-False

(1 X 5 = 5 Marks)

- a) Every set A is a subset of itself. True/False.
- b) The set of month in a year is infinite set. True/False.
- c) Partial order relation have only reflexive property. True/False.
- d) A linear recurrence relation with constant coefficients is of the form of.....
- e) The degree of recurrence relation $a_n = 2a_{n-1}$ is.....

Q2. Attempt any five parts.

(3 X 5 = 15 Marks)

- a) Define the term proper subset, universal set with suitable example.
- b) Define relation with an example.
- c) Define function with an example.
- d) Show that $1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$ by mathematical induction.
- e) Define the recurrence relations with an example.
- f) Define the generating function.

Section – B

Each question contains three parts a, b & c. Attempt any two parts of choice from each question.

Q3.

(5 X 2 = 10 Marks)

- a). If $A = \{1, 3, 5\}$, $B = \{3, 4, 5, 6\}$ and $C = \{2, 4, 6, 8\}$ then verify $A \cap (B - C) = (A \cap B) - (A \cap C)$.
- b). Explain the countable and uncountable sets with examples.
- c). If $A = \{1, 3, 5\}$, $B = \{p, q, r\}$ and $C = \{x, y, z\}$ and let $R = \{(1, p), (1, r), (2, q), (3, q)\}$ and $S = \{(p, y), (q, x), (r, z)\}$. Find the composition RoS.

Q4.

(5 X 2 = 10 Marks)

- a). Explain domain, co-domain and range of the function with example.
- b). Find gof and fog when $f : R \rightarrow R$ and $g : R \rightarrow R$ defines as: $f(x) = 2x + 3$ and $g(x) = x^2 + 5$.
- c). Find the first four terms of $a_k = 2a_{k-1} + k$, for all integers $k \geq 2$, $a_1 = 1$.

Q5.

(5 X 2 = 10 Marks)

- a). Solve $a_r - 7a_{r-1} + 10a_{r-2} = 0$ with initial condition $a_0=0$ and $a_1=3$
- b). Solve $a_{n+2} - 4a_{n+1} + 4a_n = 2^n$.
- c). Prove that by mathematical induction that $6^{n+2} + 7^{2n+1}$ is divisible by 43 for each positive integer.

Roll No.

TMC-102/TMI-103

M. C. A./M. SC. (IT) (FIRST SEMESTER) MID SEMESTER EXAMINATION, 2018

COMPUTER ORGANIZATION AND ARCHITECTURE

Time : 1:30 Hours

Maximum Marks : 50

Note : (i) This question paper contains two Sections.

(ii) Both Sections are compulsory.

Section—A

1. State True/False : (1×5=5 Marks)

- (a) NAND is a universal gate. (True/False)
- (b) Counter is a combinational circuit. (True/False)

- (c) Multiplexer is a many to one device. (True/False)

- (d) 2's complement of $(0000)_2$ is $(1111)_2$. (True/False)

- (e) A flip-flop is used to store 1 bit. (True/False)

2. Attempt any five parts : (3×5=15 Marks)

- (a) Define a half adder.

- (b) Draw and explain any *two* logic gates.
- (c) Differentiate between combinational and sequential circuit.
- (d) Subtract $845 - 425$ using r 's complement.
- (e) Define, what is a three state buffer ?
- (f) Explain the concept of 2's complement, with example.

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). $(5 \times 2 = 10 \text{ Marks})$

- (a) Draw and explain a 4 bit adder subtractor.
- (b) Multiply 5×5 using Booth's algorithm.
- (c) Convert the hexadecimal number 68BE to binary and then octal.

4. Attempt any *two* parts of choice from (a), (b) and (c). $(5 \times 2 = 10 \text{ Marks})$

- (a) State and prove De Morgan's law for three variables.
- (b) What is a decoder ? Draw a 3×8 decoder using two 2×4 decoder.
- (c) Simplify the function $f = (1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15)$ using K-map.

5. Attempt any *two* parts of choice from (a), (b) and (c). $(5 \times 2 = 10 \text{ Marks})$
- (a) Convert $(1024)_{10}$ into binary, octal and hexadecimal number, verify the answer also.
 - (b) Draw and explain JK flip-flop.
 - (c) Explain r 's and $(r - 1)$'s complement with examples.

Roll No.

TMC-106

M. C. A. (FIRST SEMESTER) MID SEMESTER EXAMINATION, 2018

PROFESSIONAL COMMUNICATION—I

Time : 1:30 Hours

Maximum Marks : 50

Note : (i) This question paper contains two Sections.

(ii) Both Sections are compulsory.

Section—A

1. Fill in the blanks/True/False : (1×5=5 Marks)

- (a) is used to as past equivalent of may.
- (b) To express strong desire, ‘would’ is used before ‘like’. (True/False)
- (c) “I must finish this chapter today.” Here, ‘must’ expresses
- (d) It ought to rain. Here ‘ought’ expresses
- (e) “He used to come here every day.” Here, ‘used to’ expresses

2. Attempt all the *five* parts : (3×5=15 Marks)
- Write *three* ways (with example) for changing a singular noun into plural.
 - Differentiate between shall and should by using them in a sentence each.
 - Define parallelism.
 - Define primary helping verbs.
 - Define Modals.

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)
- Write a paragraph on 'Welcome party that the seniors gave us' by making use of (Past indefinite, Past continuous, Past perfect and Past perfect continuous tense). (150-200 words)
 - Complete the following sentences with a suitable form of word given in the brackets : During the first class of Professional Communication, I was (sit) on the second bench when the faculty (knock) at the door. At that time, our C class was (go) on. The C faculty, (tell) the Professional Communication faculty to please (wait) for 2 more minutes. Then, the

Professional Communication faculty (enter). She (start) to (tell) us the importance of the subject for an MCA student. She (ask) me to come up in front and (tell) what the posture of the students (conveyed) about them.

- Follow the instructions :
 - Shahrukh Khan is a better than most of the Hollywood actors.
(Change to positive degree)
 - Provide the three degrees of comparison for the following :
 - Anger
 - Famous
 - Late
 - Differentiate between Elder and Older by using them in a sentence each.
 - Correct the sentence :
There are very less students in the class.
 - Correct the sentence :
I now understand why Sanjay did not told me the reason why he was late.

4. Attempt any two parts of choice from (a), (b) and (c). $(5 \times 2 = 10 \text{ Marks})$

(a) Apply parallel construction in the following sentences :

- (i) You need to work quick and decisively.
- (ii) You may respond by calling, visiting or e-Mail.
- (iii) To succeed in life, you need to take advantage of opportunities and follow your dreams.
- (iv) Nancy read a book while Joe is watching television.
- (v) Whether in class, at home or working, Shasta was always busy.

(b) Change the Voice :

- (i) Madhav helped Ria Soman in shooting a basket.
- (ii) Why did Ria tell a lie to Madhav about her health ?
- (iii) Ria was playing the guitar when Madhav found her.
- (iv) Madhav tried very hard to impress Bill Gates to fetch the funds for his school.

(v) Ria helped Madhav to prepare the speech in English.

(vi) Madhav delivered the speech in Hindi.

(vii) Madhav's mother warned Ria.

(viii) Always help your friends.

(Into usual imperative)

(ix) Ria was a smart girl.

(Into Exclamatory)

(x) Shoot the basket.

(Into Imperative using 'Let' form)

(c) Fill in the blanks with suitable verb in agreement with its subject :

- (i) One of the boys coming here.
- (ii) The number of mosquitoes increased.
- (iii) The crowd dispersed.
- (iv) Our team won the match.
- (v) Each of these problems very difficult.
- (vi) A pair of scissors lying on the floor.
- (vii) Measles prevented by taking a vaccine.
- (viii) The great scholar and poet dead.

- (ix) Rice and curry my favourite dish.
- (x) Neither the man nor his wife done much work.
5. Attempt any *two* parts of choice from (a), (b) and (c). $(5 \times 2 = 10 \text{ Marks})$
- (a) Correct the usage of Parts of Speech :
- (i) The flock of lions roamed about freely in the jungle.
 - (ii) One of the most widely spread bad habit is the use of tobacco.
 - (iii) Recently I visited Ooty and found the sceneries to be marvelous.
 - (iv) On his attitude it seems that what he wants is that the decision-making power should rest with him.
 - (v) The plan is to go for the cinema and then to have dinner.
 - (vi) He, you and I will manage this problem together.
 - (vii) If I were him, I would have taught those cheats a lesson.
 - (viii) Everyone felt that the big glittering diamond was the most unique.

- (ix) Arithmetic and English are more easier than Geography and Social Studies.
- (x) I am much glad that you have won the competition.
- (b) Correct the usage of preposition in the following sentences :
- (i) Rajesh was blind by one eye.
 - (ii) The father bought the fruit and distributed them between the children.
 - (iii) I was shocked to hear that his parents died on an accident.
 - (iv) My sister has been married with the richest member of the town.
 - (v) The venue of examination is one mile further up the hill.
 - (vi) Kishore's habit of delaying his work put his colleague to lot of trouble.
 - (vii) I do not understand why is she angry at me ?
 - (viii) Man needs security and leisure of free thinking.
 - (ix) Vishnu is one year junior than Madhur.
 - (x) They walked besides each other in silence.

- (c) Fill in the sentences using appropriate articles (a, an, the, x) :
- (i) If you have faith in Almighty, everything will turn out to be alright.
 - (ii) Our housing society comprises eight blocks and forty three flats in an area of about thousand sq. metres.
 - (iii) According to Bible, it is meek and humble who shall inherit the earth.
 - (iv) I am not rich, so I cannot afford to buy expensive car.
 - (v) My father is in bad mood today.
 - (vi) With little patience, you will be able to cross this hurdle.
 - (vii) He took to reading Times for better knowledge of the facts.
 - (viii) The famous Dr. Narayan is only Orthopedic in our village.
 - (ix) As soon as the Principal entered, everyone fell in silence.

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Paper Code: TMC - 105,

(Master of Computer Applications)
Mid Semester Examination 2018
1st Semester

Paper Name: Management Concepts and Accounting

Time: 1:30 Hours

MM: 50

Note:

- (i) This question paper contains two sections.
- (ii) Both sections are compulsory.

Section – A

Q1. State whether the statements are True-False (1 X 5 = 5 Marks)

- a) Management is defined as the art of getting things done through people(True/False)
- b) Middle management refers to the first level of management above worker(True/False)
- c) In a centralized organization, policies and procedures are usually Diverse (True/False)
- d) Accounting is the process of recording and classifying business financial transactions(True/False)
- e) Profit is the amount that a business's expenses exceed revenues(True/False)

Q2. Attempt any five parts. (3 X 5 = 15 Marks)

- a) Define the term "Management".
- b) Define Administration
- c) Clearly state the levels of management with example
- d) Define Business Entity Concept
- e) Define GAAP
- f) Clearly state the Definition of "Trial Balance"

Section – B

Each question contains three parts a, b & c. Attempt any two parts of choice from each question. (5 X 2 = 10 Marks)

Q3. a. Distinguish between centralization & decentralization

- b. Explain any two functions of Management
- c. Explain the double entry system used in Accounting.

Q4. (5 X 2 = 10 Marks)

- a. Distinguish between Management & Administration
- b. Define the concept of Working Capital
- c. Explain the Convention of Materialism

Q5. (5 X 2 = 10 Mark)

a. Explain the self esteem needs under Need Hierarchy Theory

b. Journalize the following Transactions:

2018

- Aug.1 Started business with cash Rs. 2,00,000
- Aug 5 Purchased furniture and paid by cheque Rs. 10,000
- Aug 7 Bought Machinery Rs. 40,000 by cheque
- Aug 10 Purchased goods for cash Rs. 12,000
- Aug 15 Sold goods to Mr. Suresh worth Rs. 25,000

c. Post the following transactions and Post them into Ledger

2005

- Jan 1 Mr. Ahmed Started business with cash Rs. 20,000, Stock Rs. 40,000 Building Rs. 1,50,000 and Furniture Rs. 15,000
- Jan 4 Deposited into the bank Rs. 10,000
- Jan 6 Purchased goods from Mohan Rs. 14,500
- Jan 10 Purchased goods from Kiran Rs. 7,500
- Jan 12 Sold goods to Chandra Rs. 12,000

Mid Semester Examination 2018
MCA -I Semester / M.Sc.(IT)
Shell Scripting Using Open Source Software –
Paper Code- (TMC- 103) / 9 M.J -103

Time: 1:30 Hours

MM: 50

Section – A

Q1. Fill in the blanks/True-False **(1 X 5 = 5 Marks)**

- I) In Linux system, at any time,
- (a) Only one process is running
 - (b) Several processes may run simultaneously
 - (c) Only in computer having multiple processors, more than one process can be executed
 - (d) None of these.
- II) To start a UNIX system in GUI mode, default run-level should be
- a) 0
 - b) 2
 - c) 5
 - d) 6
- III) This configuration file is used by “init process” to initialize the system
- a) /etc/inittab
 - b) /etc/init
 - c) /bin/init
 - d) None of these.
- IV) The hidden files in Linux
- a). have special status bit associated with the file descriptor
 - b). have name starting with “.” (dot)
 - c). can be accessed by the operating system only
 - d). None of these.
- V) The following is not the Linux shell
- a) Bourne shell
 - b) Korn shell
 - c) Perl shell
 - d) None of these.

Q2. Attempt any five parts. **(3 X 5 = 15 Marks)**

- a) Write short notes on Linux directory structure.
- b) Write short notes on Multitasking Operating System.
- c) Write short notes on Linux booting process
- d) Write short notes on distributed Operating system.
- e) Write short notes on system calls and library functions
- f) Write short notes on internal and external commands.