Sept 30, 2019 (9-10:30)
h.f

Roll No. .....

TMC-101

M. C. A. (FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2019
COMPUTER FUNDAMENTALS AND PROGRAMMING METHODOLOGY USING 'C'

Time : 1 : 30 Hours

Maximum Marks : 50

Note :(i) All questions are compulsory.

(ii) Answer any *two* subquestions among (a), (b) and (c) in each main question.

(iii)Total marks for each main question are **ten.**

1. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)

   (a) What is Data Processing ? Explain the Functionality of Computer.

   (b) What are the computer generations ?

   (c) Write down the rules to create a variable in C. How many types of variable are used in C language ?

2. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)
   (a) What is algorithm 7 How an algorithm is differ than pseudo code ?
   (b) Write a program to check number is even or odd.
   (c) What is constant in C language ? Write a C program to create a constant.

3. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)
   (a) Define flow chart with example.
   (b) What is the difference network and networking ? What are the types of communication in networking ?
   (c) Explain the components of DBMS and also explain any *three* advantages of DBMS.

4. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)
   (a) Write down the difference between implicit type conversion and explicit type conversion.
   (b) Write a C program to find out the factorial of a given number.
   (c) Write down the steps that will show the flow of a C program.

5. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)
   (a) Convert (2526)10 to the equivalent octal number and (1075)8 to the equivalent decimal number.
   (b) Convert (110101)2 to the equivalent hexadecimal number and octal number.
   (c) Write a C program to fmd out the largest of three numbers.

Roll No. .....

TMC 102

M. C. A. (FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2019
COMPUTER ORGANIZATION AND ARCHITECTURE

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) All questions are compulsory.

(ii) Answer any *two* subquestions among (a), (b) and (c) in each main question.

(iii) Total marks for each main question are **ten.**

1. Attempt any *two* parts of choice from (a), (b) and (c). (2X5=10 Marks)

   (a) Convert decimal number $(256)_{10}$ into binary, octal and hexadecimal.

   (b) Write procedure to convert a gray code into binary with example.

   (q) Define ***r's*** and $(r-1)$'s complement with example.

2. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)
   (a) Convert function into standard form F= A'BC + C'D + BCD + AD' .
   (b) Explain and show that how two decoders of 2 x 4 can be used to make a single 3 x 8 decoder.
   (c) Draw and explain 8 x 1 multiplexer using two multiplexers.

3. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)
   (a) Draw and explain JK flip-flop.
   (b) Describe a common bus system using multiplexers.
   (c) Convert hexadecimal numbers $(A9D3F)_{16}$ and $(5E7C)_{10}$ into octal number and vice versa.

4. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)
   (a) Simplify the function *f* using don't care condition *d* in SOP and POS forms :

$$F = E(1, 2, 3, 7, 8, 10)$$

$$D = \Sigma(5, 6, 11, 15)$$

   (b) Define the terms micro-operation, three state buffer and instruction cycle.
   (c) Multiply 7 x — 5 using Booth's algorithm.

5. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)
   (a) Prove that NAND and NOR gates are universal gates.
   (b) Subtract 1000 — 400 using 10's complement, write steps also.
   (c) Write a short note on history of computer.

Roll No. .....

TMC-103

M. C. A. (FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2019
MICROPROCESSOR AND MICROCONTROLLER

Time : 1 : 30 Hours

Maximum Marks : 50

Note :(i) All questions are compulsory.

(ii) Answer any *two* subquestions among (a), (b) and (c) in each main question.

(iii)Total marks for each main question are **ten**.

1. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)

   (a) Explain ALE signal of 8085 microprocessor.

   (b) Draw the flag register of 8085 Microprocessor and explain with *one* example.

   (c) Explain the two special purpose registers of 8085 microprocessor.

2. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)

   (a) Write a program to subtract two 8-bit numbers.

   (b) Draw the external system bus architecture.

   (c) Draw the architecture of 8085 microprocessor.

3. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

   (a) Explain the important features of 8085 microprocessor.

   (b) Mention the data transfer instructions of 8085 microprocessor with examples.

   (c) Explain the following code and specify the contents of registers and flag status after each instruction executed :

```
MW A, FFH
MVI B, 01H
ADI 0111
ADD B
MOV C, A
MOV D, B
HLT
```


4. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

   (a) Explain the control and status signals of 8085 microprocessor.

   (b) Load the hexadecimal numbers AAH and A7H in register H and L respectively and add the numbers. If the sum is greater than FFH, display 0111 at 2500H; otherwise display result.

   (c) Interface an 8KB EPROM memory with 8085 microprocessor.

5. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)

   (a) Explain the addressing modes of 8085 microprocessor.

   (b) Write an assembly language program using 8085 microprocessor to add two 32-bit numbers.

   (c) Write the difference between Memory-;napped I/O and Peripheral I/O.

Roll No. .....

TMC-104/TMI-102

M. C. A./M. SC. (IT)
(FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2019
DISCRETE MATHEMATICAL STRUCTURE AND COMBINATORICS

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) All questions are compulsory.

(ii) Answer any *two* sub questions among (a), (b) and (c) in each main question.

(iii) Total marks for each main question are **ten.**

1. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

   (a) Define countable and uncountable sets and show that the set Z of all integers is countable.

   (b) Define reflexive, irreflexive, non-reflexive symmetric and asymmetric relations on a set A= {1,2, 3}.

(c) Let R and S be relations from A to B, then prove that :

$$(R \cup S)^{-1} = R\text{-}1 \cup S^{-1}$$

2. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) Define equivalence and partial ordering relations on a set A.

(b) Let A = {1, 3, 9, 27, 81}. Then draw the Hasse diagram of the poset (A, /).

(c) Let $f(x) = x + 2$ and $g(x) = x^2 \; V x \in R$, where is set of real numbers, then prove that :

$$(g \,.f) \neq (f \cdot g)$$

3. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) Let x and y be two integers and suppose that $g(x, y)$ is defined recursively as :

$$g(x, y) = \begin{cases} 5 & , \text{if } x < y \\ g(x - y, y+2)+x & \end{cases}$$

then compute g (2, 7), $g(5, 3)$ and g (15, 2).

(b) Let $f : R \to R$ defined by :

$$f(x) = \begin{cases} 3x - 4, & x > 0 \\ -3x + 2, & 0 \end{cases}$$

Then determine $f^{-1}(0)$, $f^{-1}(2)$, $f^{-1}(-7)$.

(c) Show that $n^2 > (2n + 1)$ for $n \geq 3$ by Mathematical induction.

4. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) Prove that - $(p \wedge q) \vee q$ is a tautology and $p \wedge (q \wedge p)$ is a contradiction.

(b) Prove that :

$$p \rightarrow (q \rightarrow r) \Leftrightarrow (p \rightarrow q) \rightarrow (p \rightarrow r)$$

(c) Obtain the principal disjunctive normal form of $p \rightarrow q$.

5. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)

(a) Represent the argument :

"If study hard, then I get A's.

I study hard

.....

I get A's.

Symbolically and verify that the argument is valid.

(b) Obtain the conjunctive normal form of $p \wedge q$.

(c) Write a short note on predicates and quantifiers.

Roll No. .....

TMC-105

M. C. A. (FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2019
MANAGEMENT CONCEPTS AND ACCOUNTING

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) All questions are compulsory.

(ii) Answer any *two* subquestions among (a), (b) and (c) in each main question.

(iii) Total marks for each main question are **ten.**

1. Attempt any *two* parts of choice from (a), (b) and (c). (2 x 5=10 Marks)

   (a) Define Accounting. Discuss the objectives of Accounting.

   (b) What are the various interested parties Which use accounting information ?

   (c) What is meant by Book-keeping and Accounting ? Is Accounting a Science or Art?

2. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) Briefly describe the various branches of accounting.

(b) Discuss about balance sheet. Why is it prepared ?

(c) Discuss the different types of accounts with example.

3. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) From the following transactions of Nikhil, find out the nature of accounts and also state which account should be debited and which should be credited :

(i) Rent paid

(ii) Interest received

(iii) Purchased furniture for cash

(iv) Machinery sold in cash

(v) Outstanding salaries

(vi) Paid to Surinder

(b) Write short notes on the following :

(i) Accounting Equation Approach

(ii) Working Capital

(c) Write short notes on the following :

(i) Current asset and Current liability

(ii) Double entry system

4. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) What is meant by Journal ? Also discuss advantages of Journal.

(b) Enumerate the steps in journalizing.

(c) Journalise the following transactions :

2005

Jan. 1	Mohan started business with cash	80,000
Jan. 6	Purchased goods from Ram on credit	30,000
Jan. 8	Sold goods on cash	6,000
Jan. 15	Bought furniture from Yash for cash	8,000
Jan. 18	Paid salary to manager	6,500
Jan. 20	Paid rent to landlord in cash	1,000

5. Attempt any *two* parts of choice from (a), (b) and (c). (2x5=10 Marks)

(a) Define ledger. Explain the procedure for balancing a ledger account.

(b) What is meant by posting ? How is posting made from the journal in the ledger ? Explain with suitable examples.

(c) Define Trial Balance and explain the methods of preparation of Trial Balance.

Roll No. .....

TMC–106

M. C. A. (FIRST SEMESTER)
MID SEMESTER EXAMINATION, 2019
PROFESSIONAL COMMUNICATION—I

Time : 1 : 30 Hours

Maximum Marks : 50

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

(ii) Both Section are compulsory.

Section—A

1. Fill in the blanks with suitable prepositions : (1x5=5 Marks)

(a) The kids are learning about the Civil War ..... their history class ..... school.

(b) I have class ..... 9 a.m ..... 1 · 30 p.m. on Wednesdays.

(c) I slipped as I stepped ..... the platform.

(d) Let's walk ..... this path and see where it goes.

(e) He is grateful ..... his master ..... may favors.

2. Attempt all five parts : (3x5=15 Marks)

(a) Make Sentences using antonyms of the following words :

(i) Upset

(ii) Vague

(iii) Random

(b) Give Synonyms for the following words :

(i) Cohesive

(ii) Enormous

(iii) Incredible

(iv) Coarse

(v) Prompt

(vi) Abbreviate

(c) Make sentences with the following to bring out their meanings :

(i) Cite-Sight-Site

(ii) Bear-Bare

(d) What is Parallelism ? Give *two* examples.

(e) Give one word substitutions for the following :

(i) ..... One who knows everything.

(ii) ..... A person who believes in or tries to bring about a state of lawlessness.

..... One who feeds on human flesh.

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). (5x2=10 Marks)

(a) Rewrite the following sentences using considering the information given in the brackets :

(i) I ..... for you for half an hour. Where have you been ? (look)

(ii) I am glad you ..... me about the meeting. I ..... completely ..... about it. (remind, forget)

(iii) Harry ..... (come) to stay tomorrow. He ..... (catch) the last bus from York, which ..... (arrive) here at midnight.

(iv) We ..... (not/eat) anything for breakfast because we ..... (be) in a hurry. (past simple)

(v) I arrived two hours late because my car ..... (break down).

(b) Change the following sentences as directed :

(i) I am going to see my mother in April. (Yes/no question)

(ii) When the bell rang, the teacher was speaking to the principal. (wh. question)

(iii) I am learning French these days: (wh. question)

(iv) My uncle is arriving tomorrow. (wh. question)

(v) We are eating out tonight. (Yes/no question.)

(c) Complete the following with suitable forms of verbs given in the brackets :

I can't believe I (get) ..... that ..... my apartment, I (submit) application last week, but I didn't think I had a chance of actually getting it. When I (show) ..... up to take a look around, there were at least twenty other people who (arrive) before me. Most of them (fill, already) ..... out their applications and were already leaving. The landlord said I can ..... still apply, so I did.

4. Attempt any *two* parts of choke from (a), (b) and (c). (5×2=10 Marks)

(a) Change the 'Voice' in the following sentences :

(i) The police was interrogating the man.

(ii) They have transferred the files to the hard disk.

(iii) You must do something immediately.

(iv) They may postpone the interview.

(v) The local people organized a meeting.

(b) Rewrite the following sentences with the correct verb choice :

(i) George and Tamara (doesn't, don't) want to see that movie.

(ii) The movie, including all the previews, (take, takes) about two hours to watch.

(iii) Either my shoes or your coat (is, are) always on the floor.

(iv) Mathematics (is, are) John's favorite subject, while Civics (is, are) Andrea's favorite subject.

(v) There (was, were) fifteen candies in that bag. Now there (is, are) only one left!

(c) Edit these sentences to create parallel structures :

(i) While in France, my nephew spent his time studying French, working in a restaurant, and he jogged along the Seine River every morning.

(ii) Joan decided to paint her office, to add some new curtains, and that the rug needs dry cleaning,

(iii) Cooking and eating at home is a good idea for students because it saves time, money and it is easy to do.

(iv) My grandfather's favorite pastime is to eat in trendy restaurants and visiting art galleries.

(v) Being a nurse is a good career because of the high salary, vacations and schedules.

5. Attempt any *two* parts of choice from (a), (b) and (c). (5 x 2=10 Marks)

(a) Insert Articles where necessary :

(i) Get pound of sugar from nearest grocer.

(ii) It is a strange thing how little, in general, people know about sky.

(iii) Who wishes to take walk with me ?

(iv) Scheme failed for want of support.

(v) He is honour to his profession.

(b) Fill in the blanks with suitable connectives :

(i) Can you turn off the lights ..... you go out ?

(ii) He didn't get the job ..... he had the required qualification.

(iii) ..... it was raining heavily, we could not move out.

(iv) She is ..... fair ..... dark.

(v) I don't know ..... I should laugh or cry.

(c) Rearrange the following words/phrases to form meaningful sentences :

(i) love / of others /good manners /and / win the / respect

(ii) place / our lives / music / important / has / in / an.

(iii) buildings / are / this / there / beautiful / town / some / in.

(iv) phone /she / me / the / not / at / weekend / did.

(v) its / urbanization / in India / everywhere / has / tentacles / spread.

Roll No. | | | | | | | Paper Code: TMI-106

M.sc(IT)
Mid Semester Examination Oct. 2019
1st *Semester*

Paper Name. Shell scripting Using Open source Software

Time: 1:30 Hours MM: 50

Note:
(i) All questions are compulsory.
(ii)Attempt any two sub questions in each main question.
(iii)Total marks for each main question is 10.

1. (5 X 2 = 10 Marks)

(a) Explain the commonly used Metacharacters with an example.

(b) What will be the Outputs/Result of the following commands:

$ who -q
$ tar —rvf myarch.tar myfile.java
$ chmod 655 filename
$ cat -n myfile.txt
$ find / —name myfile.txt —print

• (c) Explain the features of Linux Operating System.

2. (5 X 2 = 10 Marks)

(a) Explain the following commands with their options:

(1) tar (2) find

(b) What is difference between HardLink and SoftLink in LINUX ?

(c) How do you change File Access Permissions in LINUX OS?

3. (5 X 2 = 10 Marks)

(a) What is an Operating System ? Explain types of Operating System.

(b) Explain the difference between following ?

• Relative and Absolute **path**

- **cp and ln command**

(c) Draw and explain the architecture diagram of LINUX operating system.

4 (5 **X** 2 = 10 Marks)

(a) What are file redirection in LINUX system?

(b) List and explain various modes of vi editor.

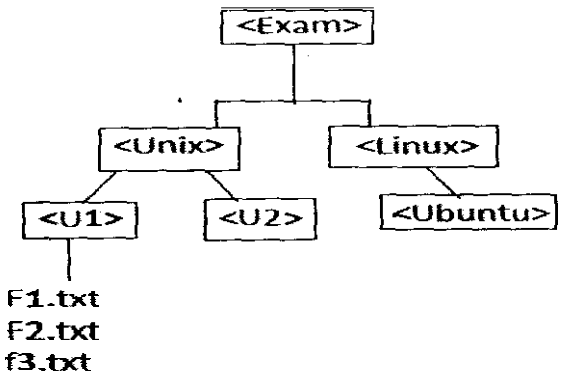
(c) Explain the following commands with their options:

(1) gzip (2) zip

5. (5 X **2** = **10** Marks)

(a) Explain the three kinds of file permissions under LINUX?

- (b) Write the commands to create following structure.



(C) From the above structure :-

(i) Copy all the file of <U1> subdirectory into **<Ubuntu> subdirectory**

(ii) Remove all the file of **<Ubuntu>** subdirectory while working in <U2> subdirectory (Use Relative Path)

(iii) Move file F1.txt into <U2> subdirectory while working in **<Ubuntu>** subdirectory (Use Absolute Path)

(iv) Remove <Linux> subdirectory

(v) Remove <Exam> subdirectory without using rmdir command.