

REG: A22



**SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY**  
Autonomous Institution  
Yamnampet, Ghatkesar, Hyderabad – 501 301.  
**SECOND MID EXAMINATION, JANUARY 2024**

**Course:** B.Tech II Year I SEM **Branch:** ECE,CSE,IT,ECM,AIML,DS,CS [REDACTED]  
**Subject:** UHV(9HC03) **Timing:** 2 Hours  
**Date :** 17.01.2024 (FN) **Max Marks:** 30

**Part – A**  
(Compulsory Short answers) **6X 2 = 12 Marks**

S.N o	Coverage		BCLL	CO(s)	Marks
1	From Unit-IV	Define Harmony in Nature. Explain why it is necessary to maintain?	L5	CO4	2M
2	From Unit-IV	How the activity is in human order is different with that of animal order?	L1	CO4	2M
3	From Unit-V	Differentiate between Unit and space.	L2	CO5	2M
4	From Unit-V	“Existence is Co-existence”. Give your opinion.	L1	CO5	2M
5	From Unit-VI	What do you mean by ethics?	L2	CO6	2M
6	From Unit-VI	What is the difference between “values and ethics”?	L1	CO6	2M

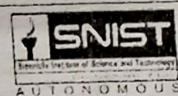
**Part – B**  
Answer any **THREE** out of the **FOUR** questions **3X 6 = 18 Marks**

S.No	Coverage		BCLL	CO(s)	Marks
7	From Unit-IV	Define Nature. What are the Four orders of Nature? Briefly explain them.	L2	CO4	6M
8	From Unit-V	What is “Ethical human conduct”? Explain in terms of Value, Policies and Character.	L5	CO5	6M
9	From Unit-VI	What do you mean by universal human order? What are its implications?	L2		6M
10 a)	From Unit-IV	How the natural characteristic (Svabhava) of material order helped human to lead a better life?	L6	CO4	2M
b)	From Unit-V	What are the comprehensive Human goals and how we can achieve this?	L5	CO5	2M
c)	From Unit-VI	Explain the term “Competence” in Professional ethics	L1	CO6	2M



Pawan

REG: A22



**SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY**  
Autonomous Institution  
Yamnampet, Ghatkesar, Hyderabad – 501 301.  
**SECOND MID EXAMINATION, JANUARY 2024**

Course: B.Tech II Year I SEM

Branch: CSE,IT,IOT

Subject: DE

Time : 2 Hours

Date : 20.01.2024 (FN)

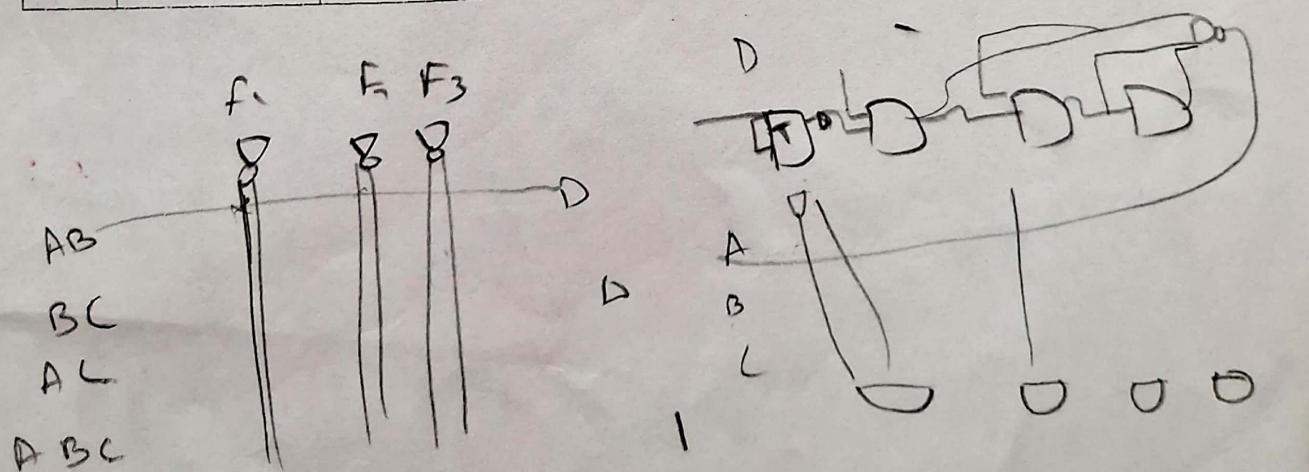
Max Marks: 30

**Part - A**  
(Compulsory Short answers) **6X 2 = 12 Marks**

S.N	Coverage		BCLL	CO(s)	Marks
0					
1	From Unit-IV	Differentiate Combinational and Sequential Circuits	L2	CO4	2
2	From Unit-IV	Give the Excitation table and characteristic equation of D Flip-Flop	L4	CO4	2
3	From Unit-V	Define Register, Draw the logic diagram for 4-bit PIPO shift register	L2	CO5	2
4	From Unit-V	Differentiate Asynchronous and Synchronous Counters	L2	CO5	2
5	From Unit-VI	Distinguish RAM and ROM	L4	CO6	2
6	From Unit-VI	Define PLD and Compare different PLD's	L4	CO6	2

**Part - B**Answer any THREE out of the FOUR questions **3X 6 = 18 Marks**

S.No	Coverage		BCLL	CO(s)	Marks
7	From Unit-IV	Explain the working of a SR flip-flop using NAND gates and give its truth table.	L2	CO4	3
		Convert JK Flip Flop to D Flip Flop	L3	CO4	3
8	From Unit-V	Design a 3-bit Synchronous Up Counter using T- FF With a neat diagram. Explain the working of a Johnson Counter.	L4	CO5	3
9	From Unit-VI	Write short notes on Sequential Memory	L2	CO6	2
		Implement the given functions using PLA $F_1 = AB' + AC' + A'BC'$ $F_2 = AC' + BC$ $F_3 = AB' + AC' + A'C$	L4	CO6	4
10 a)	From Unit-IV	Differentiate Latch and Flip-Flop	L4	CO4	2
b)	From Unit-V	Draw a MOD 10 Asynchronous counter using T FF	L2	CO5	2
c)	From Unit-VI	Implement the following two Boolean functions with a PROM. $f_1(A, B, C) = \sum (0, 1, 2, 4)$ $f_2(A, B, C) = \sum (0, 5, 6, 7)$	L3	CO6	2



40320

REG: A22



**GREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY**  
Autonomous Institution  
Yamnampet, Ghatkesar, Hyderabad – 501 301.

**SECOND MID EXAMINATION, JANUARY 2024**

Course: B.Tech II Year I SEM

Branch: CSE, IT, CS, AI & ML, IoT, DS

Subject: Discrete Mathematics

Time : 2 Hours

Date : 19.01.2024 (AN)

Max Marks: 30

Part - A

(Compulsory Short answers)

6X 2 = 12 Marks

S.No	Coverage		BCLL	CO(s)	Marks
1	Unit-IV	How many 5-letter words are there where the first and last letters are consonants? <i>SS125</i>	L3	CO4	2M
2	Unit-IV	Find the coefficient of $X^{25}$ in $(1 + X^5 + X^{10})^5$ . <i>360</i>	L3	CO4	2M
3	Unit-V	Solve the recurrence relation $a_n = a_{n-1} + a_{n-2}, n \geq 2$ , given $a_0 = 1, a_1 = 1$ using substitution method	L3	CO5	2M
4	Unit-V	Define order and Degree of recurrence relation	L1	CO5	2M
5	Unit-VI	Write the differences between Euler Graph and Hamiltonian Graph	L4	CO6	2M
6	Unit-VI	Write conditions for stating two graphs are isomorphic	L4	CO6	2M

Part - B

Answer any THREE out of the FOUR questions 3X 6 = 18 M

S.No	Coverage		BCLL	CO(s)	Marks
7	Unit-IV	There are 21 consonants and 5 vowels in the English alphabet. Consider only 8-letter words with 3 different vowels and 5 different consonants. How many such words can be formed? How many such words contain the letter a? How many contain the letters a and b? How many contain the letters b and c? How many contain the letters a, b, and c? How many begin with a and end with b?	L3	CO4	6M
8	Unit-V	Solve the recurrence relation $a_n - 9a_{n-1} + 26a_{n-2} - 24a_{n-3} = 0$ for $n \geq 0$ .	L3	CO5	6M
9	Unit-VI	Define Depth first search and Breadth first search and a spanning tree. Explain through example	L1	CO6	6M
10 a)	Unit-IV	Consider the word TALLAHASSEE. How many arrangements are there Where no two letters A appear together? <i>2322</i>	L3	CO4	2M
b)	Unit-V	Solve the recurrence relation $a_n - 6a_{n-1} + 9a_{n-2} = 0$ using characteristics roots method?	L3	CO5	2M
c)	Unit-VI	Prove that the chromatic number of a tree on $n$ vertices is 2.	L4	CO6	2M

21C1 5C1 5C4 5C4 21C1

Kiran  
Dinesh

Q

Signature



Code No:9CC51

Date: 03-Feb-2024 (FN)

**B.Tech II-Year I- Semester External Examination, Jan/Feb-2024 (Regular)**  
**DIGITAL ELECTRONICS(CSE, IT and IOT)**

Time: 3 Hours

**Max.Marks:60**

- Note:** a) No additional answer sheets will be provided.  
 b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.  
 c) Missing data can be assumed suitably.

**Bloom's Cognitive Levels of Learning (BCLL)**

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

**Part - A**

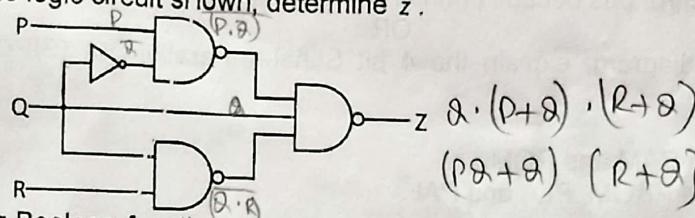
**Max.Marks: 6x2=12**

**ANSWER ALL QUESTIONS, EACH QUESTION CARRIES 2 MARKS.**

1 Write short notes on Basic gates.

**BCLL**    **CO(s)**    **Marks**  
 L3      CO1      [2M]  
 L2      CO2      [2M]

2 From the output Z of the logic circuit shown, determine  $\bar{Z}$ .



$$\begin{aligned} & \bar{Z} = (P+Q) \cdot (\bar{R}+Q) \\ & (P\bar{Q}+Q) \cdot (\bar{R}+Q) \end{aligned}$$

3 Implement the following Boolean function using decoder.

**L3 CO3 [2M]**

$$F(A, B, C) = \sum m(1, 2, 5, 7)$$

4 Draw the logic diagram of gated SR latch and write its function table.

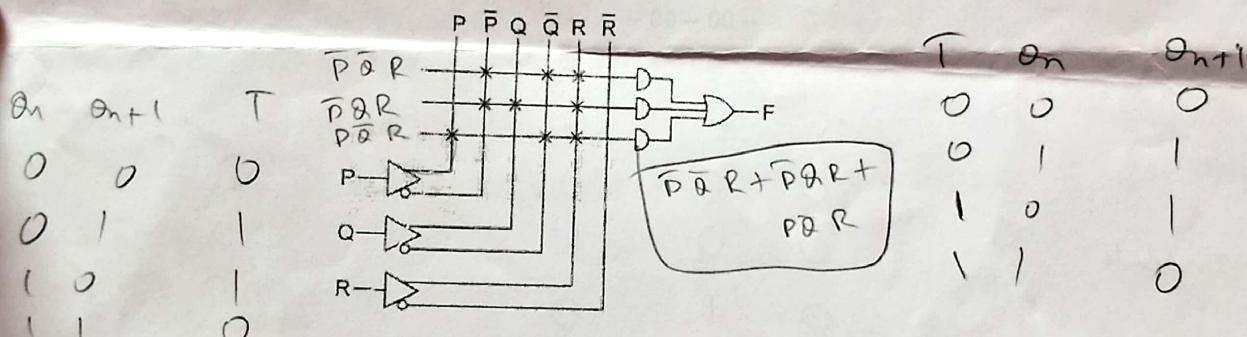
**L2 CO4 [2M]**

5 Define register, Draw logic diagram of parallel in parallel out shift register.

**L4 CO5 [2M]**

6 A programmable array logic (PAL) is shown in the figure below. Write the Boolean Expression F.

**L2 CO6 [2M]**



**Part - B**

**Max.Marks: 6x8=48**

**ANSWER ALL QUESTIONS. EACH QUESTION CARRIES 8 MARKS.**

7. Perform the following:

**BCLL**    **CO(s)**    **Marks**  
 L2      CO1      [8M]

$$i. (1234.56)_8 = (?)_{10}$$

$$0 \quad 00 \quad 0 - 0$$

$$ii. (1D6.CA8)_{16} = (?)_8$$

$$0 \quad 00 \quad 1 - 1$$

$$iii. (10110101001.101011)_2 = (?)_{16}$$

$$0 \quad 01 \quad 0 - 2$$

OR

$$1100001$$

$$0 \quad 10 \quad 1 - 5$$

Obtain 7-bit Hamming code word for the data 1100.

$$0 \quad 11 \quad 0 - 6$$

**L3 CO1 [8M]**

9. Consider the following Boolean function:

**L3 CO2 [8M]**

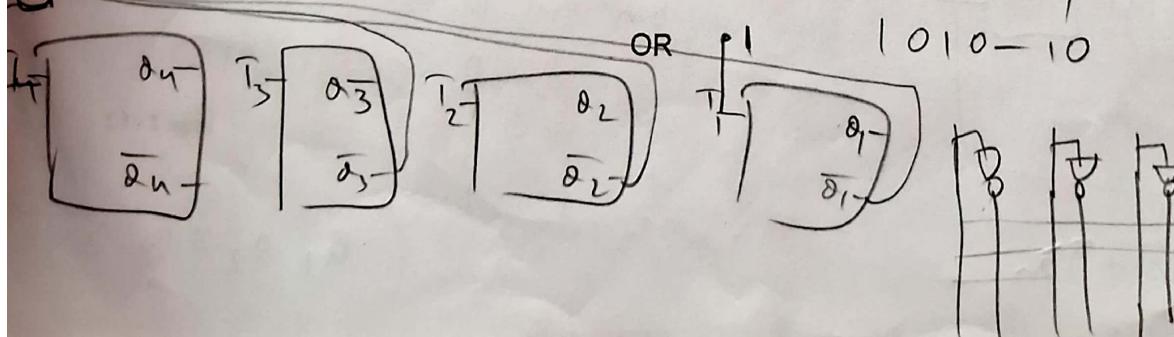
$$F(A, B, C, D) = \sum M(1, 2, 3, 6, 7, 8, 9, 12, 14)$$

Obtain reduced SOP expression using Karnaugh map.

$$1 \quad 000 - 8$$

$$1 \quad 001 - 9$$

$$1 \quad 010 - 10$$



- 10 i) Express the Boolean function  $F = A + \bar{B}C$  as a sum of minterms. L2 C02 [8M]  
ii) Express the Boolean function  $F = xy + \bar{x}z$  as a product of maxterms.
11. An  $8 \times 1$  multiplexer has inputs A, B, and C connected to the selection inputs  $S_2$ ,  $S_1$ , and  $S_0$  respectively. The data inputs  $I_0$  through  $I_7$  are as follows: L4 C03 [8M]  
(a)  $I_1=I_2=I_7=0$ ;  $I_3=I_5=1$ ;  $I_0=I_4=D$ ; and  $I_6=D'$ .  
(b)  $I_1=I_2=0$ ;  $I_3=I_7=1$ ;  $I_4=I_5=D$ ; and  $I_0=I_6=D'$ .  
Determine the Boolean function that the multiplexer implements.  
OR  
Design full adder with necessary tables.
- 12 Design full adder with necessary tables. L4 C03 [8M]
13. Implement a JK flip-flop with a T flip-flop with truth tables. L3 C04 [8M]  
OR  
Convert a D-type flip-flop into JK flip-flop using external gates.
- 14 Convert a D-type flip-flop into JK flip-flop using external gates. L3 C04 [8M]
15. Design a synchronous decade counter using T flip-flops. L3 C05 [8M]  
OR  
With a neat diagram, explain the 4 bit Serial-In-Parallel-Out (SIPO) shift register.
- 16 With a neat diagram, explain the 4 bit Serial-In-Parallel-Out (SIPO) shift register. L2 C05 [8M]
17. i) Differentiate RAM and ROM. L3 C06 [8M]  
ii) Differentiate PROM, PLA and PAL.  
OR  
Draw a PLA circuit to implement the functions:  
 $F_1 = A'B + AC + A'BC'$   
 $F_2 = (AC + AB + BC)'$   
Develop the programming table for the PLA.
- 18 Draw a PLA circuit to implement the functions:  
 $F_1 = A'B + AC + A'BC'$   
 $F_2 = (AC + AB + BC)'$   
Develop the programming table for the PLA. L3 C06 [8M]

H.T No 22311 A 05 L 4

Sreenidhi Institute of Science and Technology  
(An Autonomous Institution)

Regulations:  
A22

Code No: 9HC03

Date: 30-Jan-2024 (FN)  
B.Tech II-Year I- Semester External Examination, Jan/Feb-2024 (Regular)  
UNIVERSAL HUMAN VALUES(ECE, CSE, IT, ECM, CS, AIML and DS)

Time: 3 Hours

Max.Marks:60

Note: a) No additional answer sheets will be provided.  
b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.  
c) Missing data can be assumed suitably.

Bloom's Cognitive Levels of Learning (BCLL)

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

Part - A

Max.Marks: 6x2=12  
ANSWER ALL QUESTIONS, EACH QUESTION CARRIES 2 MARKS.

- What is the meaning of prosperity
- What does 'Knowledge of self (I)' means?
- What is meant by Intention?
- What do you mean by co-existence?
- What is Human Education?
- What do you mean by competence in professional ethics?

BCLL	CO(s)	Marks
L1	CO1	[2M]
L1	CO2	[2M]
L1	CO3	[2M]
L2	CO4	[2M]
L1	CO5	[2M]
L2	CO6	[2M]

Part - B

Max.Marks: 6x8=48  
ANSWER ALL QUESTIONS. EACH QUESTION CARRIES 8 MARKS.

- What is meant by experiential validation? Why is it a necessary part of self-exploration?  
OR  
Explain the process of self-exploration with a diagram
- Differentiate between the needs of self and the needs of body.  
OR  
Explain the harmony in nature.
- What do you understand by trust? Differentiate between intention and competence with examples?  
OR  
Enumerate some of the important values which lie at the base of good relationships.
- How will you show interconnectedness and mutual fulfillment in four orders of nature with examples.  
OR  
Explain how there is recyclability and self-regulation in nature.
- What do you understand by definitiveness of ethical human conduct?  
OR  
Explain natural acceptance of human values.
- Comment on Profession – in the light of comprehensive human goal.  
OR  
What do you mean by universal order? What are its implications?

BCLL	CO(s)	Marks
L3	CO1	[8M]
L3	CO1	[8M]
L2	CO2	[8M]
L2	CO2	[8M]
L3	CO3	[8M]
L2	CO3	[8M]
L3	CO4	[8M]
L3	CO4	[8M]
L2	CO5	[8M]
L2	CO5	[8M]
L3	CO6	[8M]
L3	CO6	[8M]

-- 00 -- 00 --

T, R, A, G, R, G, S, L, Q, 4, 6, 8



Code No: 9F303

Date: 01-Feb-2024 (FN)

B.Tech II-Year I- Semester External Examination, Jan/Feb-2023 (Regular)  
DISCRETE MATHEMATICS(CSE, IT, CS, AIML, DS and IOT)

Time: 3 Hours

Max.Marks:60

- Note: a) No additional answer sheets will be provided.  
b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.  
c) Missing data can be assumed suitably.

Bloom's Cognitive Levels of Learning (BCLL)

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

Part - A

Max.Marks: 6x2=12

ANSWER ALL QUESTIONS, EACH QUESTION CARRIES 2 MARKS.

- 1 State and explain the rules that can generate a well formed formula. L2 CO1 [2M]  
2 List the types of Quantifiers. explain. L2 CO2 [2M]  
3 What are the properties of Group? L2 CO3 [2M]  
4 State principle of inclusion. L1 CO4 [2M]  
5 Discuss the applications of Generating functions. L4 CO5 [2M]  
6 What is a Planar Graph? Give example of planar and non-planar graphs. L2 CO6 [2M]

Part – B Max.Marks: 6x8=48

ANSWER ALL QUESTIONS. EACH QUESTION CARRIES 8 MARKS.

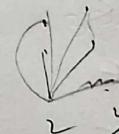
Prove that, for any propositions p, q, r the compound proposition  $\{p \rightarrow (q \rightarrow r)\} \rightarrow \{(p \rightarrow q) \rightarrow (p \rightarrow r)\}$  is a Tautology.

OR

- 8 Write down for the given proposition in symbolic form and find its negation L1 CO1 [8M]  
"All integers are rational numbers and some rational numbers are not integers."

9. i) Explain the rules of Universal specification and Universal Generalization. L3 CO2 [8M]  
ii) Test the validity of the following argument:

Snakes are dangerous animals  $\exists x S(x) \rightarrow \forall x D(x)$   
There are Snakes,  $\exists x S(x)$   $\therefore \forall x D(x)$   
therefore there are dangerous.



OR

- 10 Test the validity of the following argument: L5 CO2 [8M]  
If I study, I will not fail in the examination.  $P \rightarrow Q$   
If I do not watch TV in evenings, I will study.  $R \rightarrow P$   
I failed in the examination.  $\sim Q$   
Therefore, I must be watched TV in the evenings.  $\sim R$



11. Draw the Hasse diagram for the relation  $R = \{(x,y) | x \text{ divides } y\}$  on  $\{2, 3, 6, 12, 24, 36\}$  L3 CO3 [8M]

OR

- 12 Suppose R and S are symmetric relation on a set A then show that  $R \cap S$  is also symmetric. L4 CO3 [8M]

13. Find the co-efficient  $X^5Y^5Z^{10}$  in the expansion  $(2X + 5Y - 3Z)^{20}$ . L3 CO4 [8M]

OR

- 14 In how many ways can the letters of English alphabet be arranged so that there are exactly 6 letters between the letters 'b' and 'c'. L3 CO4 [8M]

**Code No: 9EC02**

**Date: 06-Feb-2024 (FN)**

**B.Tech II-Year I- Semester External Examination, Jan/Feb-2024 (Regular)**  
**OBJECT ORIENTED PROGRAMMING THROUGH JAVA(CSE, IT, ECM,CS, AIML,DS and IOT)**  
**Time: 3 Hours** **Max.Marks:60**

- Note:** a) No additional answer sheets will be provided.  
 b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.  
 c) Missing data can be assumed suitably.

**Bloom's Cognitive Levels of Learning (BCLL)**

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

**Part - A**

**Max.Marks: 6x2=12**

**ANSWER ALL QUESTIONS, EACH QUESTION CARRIES 2 MARKS.**

- 1 Write about type conversion and costing with example.
- 2 Describe about difference between class and interface.
- 3 Discuss about File Streams in Java.
- 4 Define Exception handling in Java.
- 5 Infer about advantages of GUI over CUI in Java
- 6 Write about ports and sockets.

BCLL	CO(s)	Marks
L4	CO1	[2M]
L1	CO2	[2M]
L2	CO3	[2M]
L1	CO4	[2M]
L2	CO5	[2M]
L1	CO6	[2M]

**Part – B** **Max.Marks: 6x8=48**

**ANSWER ALL QUESTIONS. EACH QUESTION CARRIES 8 MARKS.**

- 7 Explain about overloading methods and constructors with appropriate programs. **OR**
- 8 Infer about string handling mechanism and garbage collection with appropriate illustration. **OR**
- 9 Write about Abstract classes and super keyword with example. **OR**
- 10 Summarize about method overriding, dynamic method dispatch and using final with inheritance. **OR**
- 11 Describe about packages and collections in Java. **OR**
- 12 Write about file output stream and data input stream. **Set List Queue** **rotate** **Dequeue** **OR**
- 13 Interpolate about exception handling and multi-threading. **OR**
- 14 Explain about Synchronizing with example. **OR**
- 15 Examine about Labels, Buttons and layout managers. **OR**
- 16 Demonstrate about developing calculator and developing feedback form. **OR**
- 17 Specify about Applets life cycle with illustration. **OR**
- 18 Implement client and server program with simple example **192.118.32.1**

-- 00 -- 00 --

Page 1 of 1

Flow  
bird  
Panda  
lion  
Owl

REG: A22



**SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY**  
Autonomous Institution  
Yamnampet, Ghatkesar, Hyderabad - 501 301.

FIRST MID EXAMINATION, NOVEMBER 2023

Course: B.Tech II Year I SEM Branch: AIML, CS, CSE, DS, IOT, IT  
Subject: DISCRETE MATHEMATICS (9F303)  
Date : 14.11.2024 (FN)

Time : 2 Hours  
Max Marks: 30

Part - A  
(Compulsory Short answers)

6X 2 = 12 Marks

S.N o	Coverage		BCLL	CO(s)	Mark s
1	From Unit-I	Describe about the connectives used in propositional logic.	L2	CO1	2M
2	From Unit-I	Define Consistency and In-consistency of Premises.	L1	CO1	2M
3	From Unit-II	Give an overview of Predicate and Universe of Discourse.	L3	CO2	2M
4	From Unit-II	Write about the Universal Specification and Generalization rules.	L3	CO2	2M
5	From Unit-III	Explain in brief representations of Relations.	L2	CO3	2M
6	From Unit-III	Give an examples of Monoid and Group.	L3	CO3	2M

Part - B

Answer any THREE out of the FOUR questions

3X 6 = 18 Marks

S.No	Coverage		BCLL	CO(s)	Marks
7	From Unit-I	a). Using truth tables, show that $\neg(P \rightarrow Q) \rightarrow (\neg Q)$ is a tautology.  b). Show that $R \rightarrow S$ can be derived from the premises : $p \rightarrow (Q \rightarrow S)$ , $\neg R \vee p$ , $Q$ .	L4	CO1	3M
8	From Unit-II	a). Symbolize the following argument and check for its validity:  Tigers are dangerous animals. There are tigers. $\therefore$ There are dangerous animals.  b). Symbolize the following argument and check for its validity:  Every living thing is a plant or animal. David's dog is alive and it is not a plant. All animals have Hearts. Hence, David's dog has a heart.	L3	CO2	3M
9	From Unit-III	a). Let $A = \{1, 2, 3, 4, 12, 24, 36, 72\}$ . a. Define the relation $R$ by $aRb$ iff $a   b$ . b. Prove that $R$ is a partial order on $A$ . c. Verify whether Hasse diagram is a Lattice or not.	L4	CO3	6M
10 a)	From Unit-I	Define Tautology and Contradiction.	L1	CO1	2M
b)	From Unit-II	Translate each of the following statements into symbols. i). Not all birds can fly. ii). Some babies are illogical.	L3	CO2	2M
c)	From Unit-III	What is Anti Symmetric property? Give an example.	L2	CO3	2M

*[Handwritten signatures and marks]*



REG: A22



**SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY**  
 Autonomous Institution  
 Yammampet, Ghatkesar, Hyderabad - 501 301.

**FIRST MID EXAMINATION, NOVEMBER 2023****Course: B.Tech II Year I SEM****Subject: UNIVERSAL HUMAN VALUES****Time : 2 Hours****Date : 15.11.2023 (FN)****Branch: ECE, CSE, IT,  
ECA, CS, AIML, DS****Max Marks: 30**Part - A

(Compulsory Short answers) 6X 2 = 12 Marks

S.No	Coverage		BCLL	CO(s)	Marks
1	From Unit-I	Define Value Education.	L3	CO1	2
2	From Unit-I	Write the difference between value and skill.	L3	CO1	2
3	From Unit-II	What is natural acceptance and its parameters	L1	CO2	2
4	From Unit-II	What is difference between human conscious and Animal conscious.	L1	CO2	2
5	From Unit-III	i) Right understanding ii) Physical facilities iii) Right relationships Give the priority for above terms and explain	L2	CO3	2
6	From Unit-III	Define Harmony and right understanding	L3	CO3	2

Part - BAnswer any THREE out of the FOUR questions 3X 6 = 18 Marks

S.No	Coverage		BCLL	CO(s)	Marks
7	From Unit-I	a) How can we achieve the fulfilling life through the value education?	L2	CO1	3
8	From Unit-II	b) What are the basic guidelines for value education a) Explain the harmony in nature	L1 L2	CO1 CO2	3 3
		b) Define self exploration. What is the content of self exploration	L1	CO2	3
9	From Unit-III	a) What are the basic human aspirations? Explain b) Critically examine the prevailing notions of happiness and prosperity	L1 L2	CO3 CO3	3 3
a)	From Unit-I	What is need for value education	L1	CO1	2
b)	From Unit-II	Distinguish Sukh and Suvidha in detail.	L3	CO2	2
c)	From Unit-III	Distinguish between the needs of the Self and Body.	L3	CO3	2

*Jayshri H. S. Reddy* *Asst. Prof.* *2023*



**Part - A**(Compulsory Short answers) **6X 2 = 12 Marks**

S.No	Coverage		BCLL	CO(s)	Marks
1	From Unit-I	a. Convert $(67.5)_8 = (?)_{16}$ <b>A</b> b. $(135)_{10} = (?)_8$ <b>107</b>	L2	1	2
2	From Unit-I	Realize Basic Gates using NOR Gate.	L3	1	2
3	From Unit-II	State and Prove Identity and Idempotent Laws.	L1	2	2
4	From Unit-II	Define Prime Implicant and Essential Prime Implicant.	L1	2	2
5	From Unit-III	Define Combinational Circuit and write its applications.	L1	3	2
6	From Unit-III	Design 2x4 Decoder	L6	3	2

**Part - B**Answer any THREE out of the **FOUR** questions **3X 6 = 18 Marks**

S.No	Coverage		BCLL	CO(s)	Marks
7	From Unit-I	Generate hamming code for the message 1010	L4	1	6
a)	From Unit-II	Minimize given function using K-Map $F = \sum m(0,1,2,5,7,8,9,10,13,15)$	L5	2	4
b)		Convert given function to SSOP $F = (xy' + xz' + x'y)$	L1		
a)	From Unit-III	Design full subtractor with relevant truth tables and logic diagram.	L5	3	3
b)	From Unit-III	Implement 8X1 Mux using 4X1 Mux	L6		3
a)	From Unit-I	Subtract $A = (44)_{10}$ from $B = (28)_{10}$ using 2's complement arithmetic.	L2	1	2
b)	From Unit-II	State and prove De Morgan's laws	L3	2	2
c)	From Unit-III	Design 1-bit Comparator	L4	3	2

~~1010 111 10 10~~  
~~3 9. A~~

REG: A22



**SREENIDHI INSTITUTE OF SCIENCE AND TECHNOLOGY**  
 Autonomous Institution  
 Yamnampet, Ghatkesar, Hyderabad - 501 301.  
**FIRST MID EXAMINATION, NOVEMBER 2023**

**Course:** B.Tech II Year I SEM      **Branch:** CSE/IT/ECM/AIML/CSE/DS/IOT  
**Subject:** OOP through Java      **Time:** 2 Hours  
**Date :** 17.11.2023 (FN)      **Max Marks:** 30

Part – A

(Compulsory Short answers)

6X 2 = 12 Marks

S.No	Coverage		BCLL	CO(s)	Marks
1	From Unit-I	Describe about constructor?	L1	1	2
2	From Unit-I	Demonstrate a few methods of String class.	L3	1	2
3	From Unit-II	Explain the uses of super?	L2	2	2
4	From Unit-II	Differentiate between implements and extends keywords.	L4	2	2
5	From Unit-III	Explain types of packages with examples?	L4	3	2
6	From Unit-III	Write few methods of a Collections class?	L1	3	2

Part – B

Answer any THREE out of the FOUR questions

3X 6 = 18 Marks

S.No	Coverage		BCLL	CO(s)	Marks
7	From Unit-I	a. Explain different data types in Java? b. Define method overloading? Explain with an example.	L2 L2	1 1	3 3
8	From Unit-II	a. Illustrate method overriding with an example? b. Define an interface? Discuss about defining and implementing the interface.	L4 L2	2 2	3 3
9	From Unit-III	a. Explain about creating and importing a user defined package? b. Describe about FileInputStream class?	L3 L1	3 3	3 3
10 a)	From Unit-I	a. Discuss about this keyword.	L2	1	2
b)	From Unit-II	b. Demonstrate the uses of final.	L2	2	2
c)	From Unit-III	c. Discuss the methods of Collection interface.	L2	3	2

✓ Date



Scanned with OKEN Scanner

Code No: 9HC16

Date: 10-Feb-2024 (FN)

B.Tech II-Year I- Semester External Examination, Jan/Feb-2024 (Regular)

**QUANTITATIVE APTITUDE AND LOGICAL REASONING(CSE, IT, ECM,CS,AIML, DS & IOT)**

Time: 3:00 Hours

Max.Marks:60

Note: Answer Any 60 Questions.

Student can solve more than 60 questions, but maximum 60 marks will be awarded.

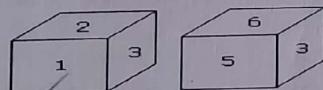
Calculator's are not allowed.

1. Find the unit digit of  $(4137)^{754}$   
a. 9    b. 7    c. 3    d. 1
2. Find the largest 4 digit number which is divisible by 88.  
a. 8844    b. 9999    c. 9944    d. 9930
3. 285 is summation of 3 numbers. Ratio between 2<sup>nd</sup> and 3<sup>rd</sup> numbers is 6:5. Ratio between 1<sup>st</sup> and 2<sup>nd</sup> numbers is 3:7. The 3<sup>rd</sup> number is?  
a. 135    b. 150    c. 124    d. 105
4. Y has to score 40% marks to pass. He gets 20 marks and fails by 40 marks. The maximum marks of the exam are?  
a. 100    b. 200    c. 150    d. 250
5. Ram is three times as old as his Sam. 2 years ago he was five times as old as Sam. What is the present age of Ram?  
a. 12 years    b. 14 years    c. 18 years    d. 24 years
6. The average age of a group of 4 friends is 36 years. The youngest friend amongst them is 6 years old. What was the average age of the group at the time of the birth of the youngest friend?  
a. 36 years    b. 38 years    c. 32 years    d. 40 years
7. Find average of natural numbers from 1 to 65?  
a. 33    b. 32.5    c. 130    d. 65
8. The ratio of two numbers is 5 : 6 and their LCM is 480, then their HCF is?  
a. 16    b. 96    c. 12    d. 240
9.  $4^{61} + 4^{62} + 4^{63} + 4^{64} + 4^{65}$  is divisible by  
a. 3    b. 5    c. 11    d. 17
10. If  $1^2 + 2^2 + 3^2 + \dots + 10^2 = 385$ , then  $3^2 + 6^2 + 9^2 + \dots + 30^2$  is equal to  
a. 3465    b. 2310    c. 1155    d. 770
11. What is 4<sup>th</sup> proportional in 9, 13 and 153?  
a. 251    b. 181    c. 175    d. 221
12. If 15% of Y is same as 21% of Z, then 12.5% of Y is equal to what per cent of Z?  
a. 20%    b. 17.5%    c. 13%    d. 9.5%
13. Find A:B:C:D when A:B = 2:3 ; B:C = 7:9 ; C:D = 5:7  
a. 70 : 105 : 135 : 189    b. 105 : 115 : 236 : 189    c. 70 : 124 : 155 : 201    d. 12 : 78 : 256 : 189
14. The three numbers are in the ratio 1/2 : 2/3 : 3/4. The difference between greatest and smallest numbers is 36. Find the numbers.  
a. 72, 84, 108    b. 60, 72, 96    c. 72, 84, 96    d. 72, 96, 108
15. A and B can finish a piece of work in 30 days, B and C can finish it in 15 days, C and A in 10 days. Time taken by them together to do this work is?  
a. 5 days    b. 2(1/2) days    c. 7(1/2) days    d. 10 days
16. A can do 1/4<sup>th</sup> part of work in 10 days and B can do 40% work in 40 days and C can do 1/3<sup>rd</sup> of the work in 13 days. Who will complete the work first?  
a. A    b. B    c. C    d. A and C both
17. The sum of two numbers is 156 and their HCF is 13. The numbers of such number pairs is  
a. 2    b. 5    c. 4    d. 3

18. A man got Rs. 130 less, as simple interest, when he invested Rs. 2000 for 4 years as to investing Rs. 2250 for same duration. What is the rate of interest?  
 a. 12%    b. 13%    c. 12.5%    d. 10.50%
19. Amit covers a distance at a speed of 24 km/hr in 6 min. If he wants to cover the same distance in 8 min, what should be his speed?  
 a. 18 km/hr    b. 21 km/hr    c. 30 km/hr    d. 15 km/hr
20. If 12 men or 16 women can do a work in 172 days, how long will 21 men and 15 women to do the same work?  
 a. 64 days    b. 60 days    c. 86 days    d. 75 days
21. Two trains A and B leave Kolkata for Sikkim at 8:00 pm and 8:30 pm respectively and run at 90 km/hr and 120 km/hr, respectively. At what distance from Kolkata, will the two trains meet?  
 a. 450 kms    b. 180 kms    c. 150 kms    d. 360 kms
22. When will be both hands of a clock at right angle, between 8pm and 9pm?  
 a. 29 (8/11) minutes past 8 pm    b. 27 (3/11) minutes past 8 pm    c. 25 (7/11) minutes past 8 pm  
 d. 24 (5/11) minutes before 9 pm
23. A is formed by reversing the digits of B. B is 45 less than A. The sum of the digits of B is 9. What is A?  
 a. 36    b. 81    c. 54    d. 72
24. In a mixture of 90 L the ratio of acid and water is 2 : 1. If the ratio of acid and water is to be 1 : 2, then the amount of water (in litres) to be added to the mixture is?  
 a. 20L    b. 40L    c. 90L    d. 100L
25. Ratio of profits of P, Q and R are 8 : 7 : 9 respectively. For what ratio of time periods did they invest if investments are in the ratio 3 : 2 : 5 respectively?  
 a. 24:14:45    b. 85:45:74    c. 3:2:5    d. 80:75:54
26. What will be selling price, if cost price is Rs. 120 and gain is 35%?  
 a. Rs. 135    b. Rs. 85    c. Rs. 155    d. Rs. 162
27. A sold a car to B at a profit of 25%. B incurred loss of 15% while selling the same car to C. A spent Rs. 50000 for this car. At what price did C buy it?  
 a. Rs. 62500    b. Rs. 60000    c. Rs. 53125    d. Rs. 90000
28. The marked price of a watch is Rs. 800. A shopkeeper gives two successive discounts and sells the watch at Rs. 612. If the first discount is 10%, the second discount is  
 a. 12%    b. 20%    c. 15%    d. 10%
29. A train moves with the speed of 180 km/hr. Its speed (in metres per second) is  
 a. 5    b. 40    c. 30    d. 50
30. A car travelling with  $\frac{5}{7}$ th of its actual speed covers 42km in 1hr. 40mins. 48 secs. Find the actual speed of the car.  
 a. 17(6/7) km/hr    b. 35 km/hr    c. 25 km/hr    d. 30 km/hr
31. If ratio of the areas of two squares is 1:4, the ratio of their perimeters is  
 a. 1:2    b. 1:4    c. 1:6    d. 1:8
32. Rs. 20400 was divided in two parts and then invested. One part invested at 6.25% for 8 years yields the same interest as the other part invested at 7% for 5 years. What is the value of smaller part?  
 a. 9600    b. 8400    c. 10100    d. 6500
33. The population of a city is 50,000 at present. It increases at the rate of 10% per annum. What will be its population 3 yr from now?  
 a. 67,250    b. 65,550    c. 60,500    d. 66,550
34. If 3 men can do a work in 2 days and 4 boys can do the same work in 6 days, then in how many days will the same work be completed by 8 men and 8 boys?  
 a. 2 days    b. 3/5 Days    c. 1.5 Days    d. 3/4 Days
35. A and B took a job for Rs. 7200. A alone can do it in 12 days. B alone can do it in 16 days. They completed the work in 6 days with the help of C. Find the share of C.  
 a. Rs. 1200    b. Rs. 900    c. Rs. 800    d. Rs. 600
36. What is the angle between the two hands of a clock when the time shown by the clock is 6.30 p.m. ?  
 a. 0deg.    b. 5deg.    c. 30deg.    d. 15deg.

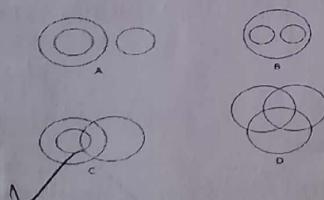
- At what time between 3 and 4 o'clock will the minute hand and the hour hand are on the same straight line but facing opposite direction a. 3:49 b. 3:15 c. 3:39  $\frac{1}{11}$  d. 3:49  $\frac{1}{11}$
- The first republic day of India was celebrated on 26th January, 1950. It was ?  
 (a) Monday (b) Tuesday (c) Friday (d) Thursday
- What is the remainder when  $1! + 2! + 3! + \dots + 50!$  divided by 4.  
 (a) 0 (b) 1 (c) 2 (d) none
- The simple Interest on a certain sum of money at the rate of 4% p.a. for 5 years is Rs. 1680. At what rate of interest the same amount of interest can be received on the same sum after 4 years?  
 (a) 5% (b) 6% (c) 7% (d) 8%
- U, S, P, L, G, ?  
 a. Bb. Ac. Dd. C
- AB, DE, GH, JK, ?  
 a. LMb. OPc. MNd. PQ
- IJK, NOP, STU, ?  
 a. ZYXb. XYZc. WXYd. YZA
- Find the wrong term in 3, 8, 15, 24, 35, 49, 63  
 a. 15b. 35c. 49d. 63
- 2, 5, 9, 19, 37, ?  
 a. 73b. 75c. 76d. 78
- 4, 10, 28, ?, 244, 730  
 a. 24b. 77c. 82d. 98
- In a certain code language, 'it be pee' means 'dogs are blue', 'sik hee' means 'large horses' and 'pee mit hee' means 'horses are pigs'. How is 'pig' written in this code?  
 a. Heeb. Peec. Sikd. Mit
- If R=19, RON = 50, then what FONTS equal to?  
 a. 75b. 76c. 77d. 79
- If 'air' is called 'green', 'green' is called 'red', 'red' is called 'sea', 'sea' is called 'blue', 'blue' is called 'water' and 'water' is called 'pink', then what is the color of grass?  
 a. Greenb. Airc. Redd. Pink
- A billionaire drove his Ferrari towards North, then turned left and drove 10 km and again turned left and covered 20 km. He found himself 10 km West of his starting point. How far did he drive northward initially?  
 a. 10 kmb. 15 kmc. 20 kmd. 25 km
- One morning, Manish and Ali were talking to each other face to face at a crossing. If Ali's shadow was exactly to the left of Manish, which direction was Manish facing?  
 a. Eastb. Westc. Southd. North
- If South-East becomes North, North-East becomes West and so on. What will West become?  
 a. South-Eastb. South-Westc. North-Eastd. North-West
- In a family of six persons, L, M, N, F, P, Q, there are two married couples. F is grandmother of L and mother of M. N is wife of M and mother of Q. Q is the grand-daughter of P. Who among the following is one of the couples?  
 a. N-Fb. F-Pc. P-Md. None of these
- P x Q means P is the father of Q. P - Q means P is the sister of Q. P + Q means P is the mother of Q. P ÷ Q means P is the brother of Q.
- Which of the following represents 'R is niece of M'?  
 a. M - J + R - Nb. R - M x T - Wc. M - K x T - Rd. None of these
- Pointing towards a girl, a man said to a woman, "Her mother is the only daughter of your mother." How is the girl related to that woman?  
 a. Sisterb. Daughterc. Auntd. Wife
- No key is door. All doors are pens. Some pens are houses.  
 Conclusion - I. No key is house. II. Some pens are doors.  
 a. Only I followsb. Only II followsc. Only III followsd. Only I and II follow Both II and III follow

57. All flowers are toys. Some toys are idiots. Some angels are idiots.  
 Conclusion - I. Some angels are toys. II. Some idiots are flowers. III. Some flowers are angels.  
 a. Only I follows b. Only II follows c. Only III follows d. Only I and II follow e. None follows
58. Some guns are hammers. Some hammers are bullets. Some bullets are axes.  
 Conclusion - I. Some axes are hammers. II. Some bullets are guns. III. Some axes are guns.  
 a. Only I follows b. Only II follows c. Only III follows d. Only I and II follow e. None follows
59. How many times do the hands of a clock coincide in 24 hours?  
 a. 22 b. 24 c. 26 d. 28
60. Statement - Only good dancers are invited in the conference. Good-dancers have a charming personality.  
 Conclusions - I. All invited dancers in the conference have charming personality.  
 II. Those dancers who do not have charming personality are not invited in the conference.  
 a. Only I follows b. Only II follows c. Either I or II follows d. Neither I nor II follows e. Both I and II follow
61. The last day of the century cannot be a) Sunday b) Wednesday c) Friday d) Saturday
62. What day of the week was 31st July, 1993?  
 a) Monday b) Sunday c) Saturday d) Tuesday
63. Choose the number pair/group which is different from others.  
 a. 8 : 10 b. 40 : 50 c. 30 : 36 d. 28 : 35 e. 16 : 20
64. In a certain code language, "ORANGE" is written as "NTETOO". How would "BLACK" be written in that language?  
 a) ANEIS b) ANEJTC c) AMEIS d) ANFISE e) AMEJS
65. If "+" implies "subtract", "\*" implies "division", "-" implies "addition", "/" implies "multiply",  $5 - 3/6 * 3 + 4 = ?$   
 a. 5 b. 6 c. 7 d. 8 e. 9
66. 'A' is the sister of 'B'. 'C' is the husband of 'B'. 'C' is the brother of 'H'. What is the relation of 'H' and 'A'?  
 a. Son b. No specific relation c. Sister-in-law d. Brother-in-law e. Daughter
67. If a train crosses a pole in 12 seconds while travelling at a speed of 45km/hr, then in how much time will the train cross a bridge of length 600m at same speed?  
 a. 1 minute 20 seconds b. 60 seconds c. 40 seconds d. 45 seconds
68. A train passes a stationary pole in 8 seconds. The train also passes a 200 m long bridge in 28 seconds. What is the length and the speed of the train?  
 a. Length = 200m; Speed = 36 m/s b. Length = 160m; Speed = 20 m/s c. Length = 80m; Speed = 10 m/s d. Length = 100m; Speed = 20 m/s
69. Speed of river is 6 km/hr. Speed of a motorboat in still water is 30km/hr. How much distance can it cover downstream in 24minutes?  
 a. 9.8 km b. 864 m c. 12.8 km d. 14.4 km
70. Vijay rows a boat 80 km along the stream in 1 hour 20 minutes. Given that his rowing speed in still water is 45 km/hr, in how much time will he cover the same distance against the stream?  
 a. 4 hours b. 3 hours 10 minutes c. 2 hours 40 minutes d. 2 hours 30 minutes
71. Which digit will appear on the face opposite to the face with number 4?



a) 3 b) 5 c) 6 d) 2/3

72. Which of the following diagrams correctly shows the relationship between boys, athletes, and students?



**Assertion (A):** Baking soda helps reduce stomach acidity. **Reason (R):** It is a powerful natural cleaner.

a. Both A and R are true and R is the correct explanation of A. b. Both A and R are true, but R is not the correct explanation of A. c. A is true, but R is false. d. A is false, but R is true. e. Both A and R are false.

74. **Assertion (A):** Diamond is used for cutting the glass. **Reason (R):** The refractive index of diamond is high.

a. Both A and R are true, and R is the correct explanation of A. b. Both A and R are true, but R is not the correct explanation of A. c. A is true, but R is false. d. A is false, but R is true. e. Both A and R are false.

75. **Assertion (A):** The earthworms reduce the fertility of the soil. **Reason (R):** They make the soil soft and porous.

a. Both A and R are true, and R is the correct explanation of A. b. Both A and R are true, but R is not the correct explanation of A. c. A is true, but R is false. d. A is false, but R is true. e. Both A and R are false.

**Directions(76-78)** Each problem consists of a problem followed by two statements. Decide whether data in the statements are sufficient to answer the question. Select your answer according to whether:

- (a) statement I alone is sufficient, but statement II alone is not sufficient to answer the question  
(b) statement II alone is sufficient, but statement I alone is not sufficient to answer the question  
(c) both statements taken together are sufficient to answer the question, but neither statement alone is sufficient  
(d) Each statement alone is sufficient  
(e) Statements I and II together are not sufficient, and additional data is needed to answer the question.

76. Is the integer k is divisible by 40? (a)

I. 8 is a factor of k II. k is a factor of 10

77. What is  $(x^2 / y^2) + (y^2 / x^2)$ ? (c)

I.  $x/y + y/x = 6$  II.  $x/y - y/x = 2$

78. If n is positive integer, is  $150/n$  an integer? (d)

I:  $n < 7$  II: n is a prime number

**Directions (79-80):** Read the following information to answer the given questions:

A,B,C,D,E,F and G are playing cards sitting around a circular table. D is not neighbor of C or E. A is neighbor of B and C. G, who is second to the left of D, is the neighbor of E and F.

79. Which of the following is correct?

a) B is between A and D b) D is between F and G c) E is to the immediate right of G d) F is to the immediate left of G

80. Which of the following has the pair with the second person sitting to the immediate right of the first person?

d) AE e) None of these