Guru Nanak Dev Engineering College, Ludhiana			
Department of Information Technology			
Program	B.Tech.(IT)	**Semester**	5
Subject Code	PCIT-111	**Subject Title**	Internet of Things
Mid Semester Examination (MSE) No.	3	**Course Coordinator**	Prof. Himani Sharma
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date Of MST		**Roll Number**	

Note: Attempt all questions

Q.No.	Question	COs, RBT Level	Marks
Q1	Illustate the IoT conceptual framework.	CO1, L3	2
Q2	Analyze the detail the architectural components of IOT and M2M architecture.	CO1, L4	2
Q3	Explain about the privacy and vulnerabilities of IoT. What are the security requirements and threat analysis in IoT?	CO1, L2	4
Q4	Discuss the various domains and services capabilities in ETSI high level architecture for applications and services in the internet of ATM machine.	CO2, L2	4
Q5	Compare and Contrast the different cloud deployment models. Monitor and evaluate the data collection, storage and computing with cloud computing,	CO2, L4	4
Q6	Design and develop the sensor technology for sensing the real world using analog and digital sensors, and examples for sensing devices for IoT and M2M.	CO5, L5	8

Course Outcomes (CO)
Students will be able to

1	Analyze IOT in terms of Conceptual framework
2	Illustrate the design principles for connected devices and web- connectivity
3	Discriminate the functionality of IP and MAC addresses along with the application layer protocols
4	Outline cloud computing paradigm for data Collection, storage and computing services
5	Elucidate sensor technology for sensing the real world using analog and digital sensors
6	Outline security tomography of large networks and layered attacker model

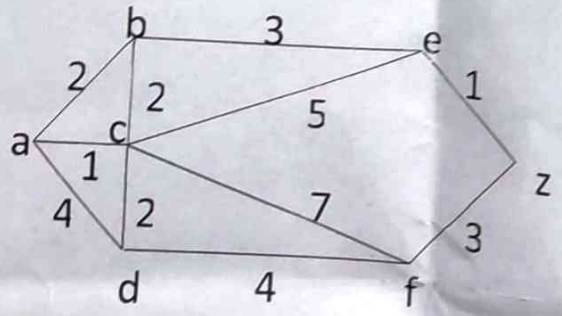
RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dev Engineering College, Ludhiana

Department of Information Technology

Program	B.Tech.(IT)	**Semester**	5
Subject Code	PCIT-110	**Subject Title**	Discrete Mathematics
MSE No.	3	**Course Coordinator(s)**	Jaskiran Kaur
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date	02-12-2024	**Roll Number**	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	In how many ways 6 Mathematics books and 5 English books can be arranged on a bookshelf. Also find number of ways: a) English books should be kept together always. b) All English books kept together either at start of the shelf or at end of the shelf.		2
Q2	Find the number of eleven letter words that can be formed using the word MATHEMATICS.		2
Q3	Let R be a relation where R= { (1,1), (1,2), (2,3)} on a set A= {1, 2, 3} Find reflexive, symmetric and transitive closure of R.		4
Q4	Discuss the various properties of algebraic structures.		4
Q5	Each student in Liberal Arts at some college has a mathematics requirement A and a science requirement B. A poll of 140 students shows that: 60 completed A, 45 completed B, 20 completed A and B. Use a venn diagram to find number of students who have completed. a) Atleast one of A and B. b) Exactly one of A and B. c) Neither A nor B.		4
Q6	Use Dijkstra's slgorithm to find the shortest path from node A to node Z in the following graph: 		6

Guru Nanak Dev Engineering College, Ludhiana

Department of Information Technology

Program	B.Tech.(IT)	**Semester**	5th
Subject Code	PCIT-109	**Subject Title**	Programming in Java
MSE No.	3	**Course Coordinator(s)**	Pf.Gitanjali Sharda Pf.Reema verma
Max. Marks	24	**Time Duration**	1 hour 30 minutes
Date of MST	03/12/2024	**Roll Number**	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	What is primary purpose of Super vs Super()?	CO2,L1	2
Q2	"Write once and Run AnyWhere"-support this statement with proper reasoning.	CO1,L4	2
Q3	If a class defines several constructor, is it feasible to invoke one constructor from another constructor? Justify your ans.	CO2, L3	4
Q4	Demonstrate **method overloading** and **method overriding** by analyzing their roles in class hierarchies, their effects on method signature and inheritance, and their implications for code maintainability and extensibility.	CO2, L3	4
Q5	Develop code for user-defined exception which illustrate the usage of multiple "catch" blocks.	CO4, L5	4
Q6	a) Write a Java program that creates three threads. First thread displays "Good Morning" every one second, the second thread displays "Hello" every two seconds and the third thread displays "Welcome" every three second b) Evaluate the advantages and disadvantage of using checked and unchecked exception in java,In what scenarios might you choose one over another?	CO3 ,L6 CO4 ,L5	8(4+4)

Course Outcomes (CO): *Students will be able to*

1	Use primitive data types, operators and control statements to develop programs.
2	Discuss methods and arrays along-with basic object oriented principles.
3	Implement exception handling, multithreading, string handling, packages and interfaces.
4	Develop event handling based components for interaction of the user with a GUI.
5	Create logic based application by the use of strings.
6	Identify and solve complex problems in the environment of Java programming.

RBT Classification	**Lower Order Thinking Levels (LOTS)**			**Higher Order Thinking Levels (HOTS)**		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating