

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make-up Examination-Nov-2025

COURSE CODE (CREDITS): 25B11BI312 (3)

MAX. MARKS: 25

COURSE NAME: Bioinformatics data Management

COURSE INSTRUCTORS: Dr. Shikha Mittal

MAX. TIME: 1 Hour 30 Minutes

Note: Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks																				
Q1	Given: Employee Table <table><tr><th>EID</th><th>ENAME</th><th>DEPT</th><th>SALARY</th></tr><tr><td>1</td><td>Ravi</td><td>HR</td><td>50000</td></tr><tr><td>2</td><td>Anita</td><td>IT</td><td>60000</td></tr><tr><td>3</td><td>Karan</td><td>IT</td><td>55000</td></tr><tr><td>4</td><td>Ritu</td><td>HR</td><td>52000</td></tr></table> <p>(a) Write an SQL query to find average salary by department. (b) Find employees earning more than the average IT salary. (c) Relational Algebra expression for all HR employees:</p>	EID	ENAME	DEPT	SALARY	1	Ravi	HR	50000	2	Anita	IT	60000	3	Karan	IT	55000	4	Ritu	HR	52000	[II]	(3)
EID	ENAME	DEPT	SALARY																				
1	Ravi	HR	50000																				
2	Anita	IT	60000																				
3	Karan	IT	55000																				
4	Ritu	HR	52000																				
Q2	What is data independence? Explain its types.	[I]	(3)																				
Q3	Write in short – a. Define domain, tuple and attribute b. Difference between single value and multivalued attributes c. Difference between select and project in SQL and relational databases d. E-R model e. Notations used in E-R model	[I,II,III]	(10)																				
Q4	Describe in detail the mapping cardinalities used in E-R model.	[III]	(3)																				
Q5	Briefly explain the different types of keys used in database management systems.	[I,II]	(3)																				
Q6	What is the difference between file system and DBMS?	[I]	(3)																				