

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make-up Examination-Nov-2025

COURSE CODE (CREDITS): ~~25B11BI312~~ (3) ~~13 M)~~ ~~8 T~~ ~~112~~

MAX. MARKS: 25

COURSE NAME: Advanced Bioinformatics

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	Marks																				
Q1	What do understand by Phred score in a fastq file? What is the minimum requirement of Phred score to start further downstream analysis? For a sequence, if Phred score is 30, what will be the percentage inaccuracy?	(4)																				
Q2	Now-a-days next generation sequencing is widely used in multiple fields of biosciences. Describe in detail the fields in which next generation sequencing is used.	(4)																				
Q3	Write in short – a. Can you explain what FASTQ format files are b. Difference between single value and multi-valued attributes c. Notations used in E-R model d. Composite and component attributes e. Difference between DDL and DML	(5)																				
Q4.	Table: EMPLOYEE <table><tr><th>EmpID</th><th>EmpName</th><th>DeptID</th><th>Salary</th></tr><tr><td>101</td><td>Riya</td><td>D1</td><td>40000</td></tr><tr><td>102</td><td>Aman</td><td>D2</td><td>35000</td></tr><tr><td>103</td><td>Suresh</td><td>D1</td><td>45000</td></tr><tr><td>104</td><td>Meena</td><td>D3</td><td>30000</td></tr></table> a. List names of employees working in department D1. b. Find the total salary of all employees. c. Display the names of employees who earn more than 35000. d. Display all employees sorted by salary in descending order	EmpID	EmpName	DeptID	Salary	101	Riya	D1	40000	102	Aman	D2	35000	103	Suresh	D1	45000	104	Meena	D3	30000	(4)
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Q5	Briefly explain the different types of keys used in database management systems.	(4)																				
Q6	What is the difference between file system and DBMS?	(4)																				