

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

B.Tech- VIII Semester (CSE/IT)

COURSE CODE (CREDITS): 19B1WCI835 (3)

MAX. MARKS: 25

COURSE NAME: Cloud Computing Security

COURSE INSTRUCTORS: Er. Nitika

MAX. TIME: 1 Hour 30 Min

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	<p>A cloud service provider hosts 5 tenants on a shared infrastructure. The storage and compute requirements for each tenant are as follows:</p> <table><tr><th>Tenant</th><th>Storage(TB)</th><th>VMs</th><th>vCPUs Per VM</th><th>RAM per VM(GB)</th></tr><tr><td>A</td><td>2</td><td>20</td><td>4</td><td>8</td></tr><tr><td>B</td><td>3</td><td>25</td><td>6</td><td>12</td></tr><tr><td>C</td><td>1.5</td><td>15</td><td>3</td><td>6</td></tr><tr><td>D</td><td>4</td><td>30</td><td>8</td><td>16</td></tr><tr><td>E</td><td>2.5</td><td>18</td><td>5</td><td>10</td></tr></table> <p>The provider uses the following isolation and pricing strategies:</p> <ul style="list-style-type: none">Storage isolation with encryption: Adds 20% overhead to the total storage.Compute isolation using dedicated hardware: Increases compute costs by 30%.Cost per TB of storage (without overhead): \$50.Cost per vCPU with RAM (without isolation overhead): \$12 per vCPU with 2 GB RAM. <ol style="list-style-type: none">Calculate the total storage cost after applying the encryption overhead.Calculate the total compute cost considering the isolation overhead.Determine the total cost for hosting all five tenants.	Tenant	Storage(TB)	VMs	vCPUs Per VM	RAM per VM(GB)	A	2	20	4	8	B	3	25	6	12	C	1.5	15	3	6	D	4	30	8	16	E	2.5	18	5	10	CO1, CO2	(6)
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Q2	<p>During an attack simulation on a cloud-based application that uses multi-factor authentication (MFA), the following statistics are recorded:</p>	CO3, CO4	(8)																														