## UPES
### End Semester Examination, May 2023

**Course: Applied DevOps**                                      **Semester: 6th**
**Program: B.Tech CSE DEVOPS**                              **Time: 03 hrs.**
**Course Code: CSDV3011**                                      **Max. Marks: 100**

**Instructions: All Questions are compulsory. Please attempt the questions in a serial order.**

<table>
<tr><td colspan="4" align="center"><b>SECTION A</b><br>(5Qx4M=20Marks)</td></tr>
<tr><td>S. No.</td><td></td><td><b>Marks</b></td><td><b>CO</b></td></tr>
<tr><td>Q 1</td><td>How do you estimate the maintenance cost of the software? (explain with process models)</td><td>4</td><td>CO1</td></tr>
<tr><td>Q2</td><td>Explain how independent micro-services communicate with each other.</td><td>4</td><td>CO2</td></tr>
<tr><td>Q3</td><td>Why system engineers must understand the environment of a system? Give two reasons.</td><td>4</td><td>CO2</td></tr>
<tr><td>Q4</td><td>Define software life cycle. List all life cycle models</td><td>4</td><td>CO3</td></tr>
<tr><td>Q5</td><td>Can public cloud considered as a limited cloud for software development? Justify with example.</td><td>4</td><td>CO4</td></tr>
<tr><td colspan="4" align="center"><b>SECTION B</b><br>(4Qx10M= 40 Marks)</td></tr>
<tr><td>Q6</td><td>How the improper project planning affects software system? How DevOps helps to rectify such type of challenge?</td><td>5+5</td><td>CO2</td></tr>
<tr><td>Q7</td><td>Describe role and functionality of cloud foundation services platform team at Starbucks. How they used Terraform and Vault on their journey to better, and more advanced infrastructure as code practices?</td><td>10</td><td>CO3</td></tr>
<tr><td>Q8</td><td>Compare the following life cycle models based on their distinguishing factors, strengths and weakness of waterfall model, AD model, Spiral model, and Formal method model. (Present in the form of table only, use diagrams wherever necessary)</td><td>10</td><td>CO1</td></tr>
<tr><td>Q9</td><td>Elaborate the different challenges and risks associated with cloud computing. (Consider any cloud service provider for explanation)<br><b>OR</b><br>Explain Cloud billing service model for IaaS, PaaS with their architectural framework.</td><td>10</td><td>CO3</td></tr>
<tr><td colspan="4" align="center"><b>SECTION-C</b><br>(2Qx20M=40 Marks)</td></tr>
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| Q10 | Develop the process of ordering a pizza over the phone. Draw the use case diagram and sketch the activity diagram representing each step of the process, from the moment you pick up the phone to the point where you start eating pizza. Include activities that others need to perform. Add exception handling to the activity diagram you developed. Consider at least two exceptions (e.g. delivery person wrote down wrong address, delivery person brings wrong pizza). | 20 | CO3 |
|---|---|---|---|
| Q11 | Suppose you have a budget cost of a project as Rs. 9,00,000. The project is to be completed in 9 months. After a month, you have completed 10% of the project at a total expense of Rs. 1,00,000. The planned completion should have been 15%. You need to evaluate whether the project is on-time and on-budget? Use earned value analysis approach and interpret. **Or** Draw software design process and describe every components. List out various software quality factors. | 10 + 10 | CO4 |