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Roll Number: _____

No. of Pages = 02

Thapar Institute of Engineering and Technology
(Deemed to be University), Patiala
Department of Computer Science and Engineering
AUXILIARY EXAMINATION – August 2022

BE(COE)

Course Code: UCS503

Course Name: Software Engineering

25th August, 2022

Time: 5:30pm – 7:30 pm

Duration: 2 Hrs. M. Marks: 50

Name of Faculty: HAR

Note: 1. Attempt all questions

2. While drawing the diagrams, if you discover that the narrative is incomplete, assume and write reasonable explanations to complete it along with the diagrams.

S.No.	Question	Marks
Q.1	Draw the Class Diagram for the Employee Hiring System for JBC company. The company keeps records of all employees, their skills, projects assigned, and their departments. New employees are hired by the personnel manager based on data in an application form and evaluations collected from other managers who interview the job candidates. Prospective employees may apply at any time. Engineering managers notify the personnel manager when a job opens and list the characteristics necessary to be eligible for the job. The personnel manager compares the qualifications of the available pool of applicants with the characteristics of an open job, then schedules interviews between the manager in charge of the open position and the three best candidates from the pool. After receiving evaluations on each interview from the manager, the personnel manager makes the hiring decision based upon the evaluations and applications of the candidates and the characteristics of the job, and then notifies the interviewee and the manager about the decision. Applications of the rejected applicants are retained for one year, after one year these applications are purged. When hired, a new engineer completes a nondisclosure agreement, which is filed with other information about the employee.	(10)
Q.2(a)	For the Hospital Management System, write Normal Requirements, Expected Requirements and Exciting Requirements as per Quality Function Deployment (QFD).	(5)
Q.2(b)	For Employee Payroll Management System (EPMS), the employee wants to print his/her salary slip, using his account on EPMS. Write this functional requirement, in the form of User Story Card (front side of card).	(5)
Q.3(a)	In the system of airport check-in and security screening, passenger, tour guide, child, and passenger with special needs (e.g. with disabilities) are the business actors and all are playing external roles. Passenger interacts with individual check-in as well as security screening modules. Functionality of Individual check-in extends the functionality of baggage check-in. And Individual check-in functionality is related to the function	(5)

Q.3(b)	<p>named group check-in with the relationship include, which is dealt by tour guide only. Function termed as Individual Check-in is generic to the functionalities named Counter check-in and Kiosk check-in, where both extends a sub task of baggage handling. Draw a neat & clean Use Case Diagram for the above-mentioned scenario.</p> <p>Explain all the symbols and types of relationships used for Use Case Diagram.</p>	(5)																																		
Q.4	<p>Describe the following terms of Software Testing:</p> <ol style="list-style-type: none"> Boundary Value Analysis Software Verification Cyclomatic Complexity Integration Testing Debugging 	(2*5 =10)																																		
Q.5	<p>Consider a Hotel Management Software with the parameters given as under:</p> <table border="1" data-bbox="319 801 1203 1263"> <thead> <tr> <th></th><th>Count</th><th>Complexity</th></tr> </thead> <tbody> <tr> <td rowspan="3">External inputs</td><td>10</td><td>High</td></tr> <tr> <td>5</td><td>Low</td></tr> <tr> <td>4</td><td>Average</td></tr> <tr> <td rowspan="3">External outputs</td><td>6</td><td>High</td></tr> <tr> <td>12</td><td>Average</td></tr> <tr> <td>7</td><td>Low</td></tr> <tr> <td rowspan="2">External enquiries</td><td>3</td><td>Low</td></tr> <tr> <td>16</td><td>Average</td></tr> <tr> <td rowspan="3">External files</td><td>12</td><td>Average</td></tr> <tr> <td>11</td><td>Low</td></tr> <tr> <td>8</td><td>High</td></tr> <tr> <td rowspan="2">External interfaces</td><td>15</td><td>High</td></tr> <tr> <td>12</td><td>Low</td></tr> </tbody> </table> <p>Assume 4 complexity adjustment factors are treated as Average, 3 complexity adjustment factors are considered as Moderate and remaining other complexity adjustment factors are treated as Essential. Calculate the Function Point Count, showing all the steps of calculation.</p>		Count	Complexity	External inputs	10	High	5	Low	4	Average	External outputs	6	High	12	Average	7	Low	External enquiries	3	Low	16	Average	External files	12	Average	11	Low	8	High	External interfaces	15	High	12	Low	(10)
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