



Continuous Assessment Test II – October 2023

Programme	: Master of Computer Application (M.C.A)	Semester	: FALL 23-24
Course	: Software Engineering	Code	: PMCA504L
Faculty	: Dr. Prakash B	Slot	: D1
		Class Nbr	: CH2023240101718
Time	: 1½ Hours	Max. Marks	: 50

Answer ALL the Questions:

- | Q.No. | Question Description | Marks |
|-------|---|-------|
| 1. | Hospital Management System (HMS) is a web-based system that enables you to automate the functioning of a hospital through online. The application helps to book appointments for the <u>patients</u> , <u>check doctors' availability</u> , <u>maintains record of patients</u> , and <u>rooms availabilities</u> . All the patients and doctors were given a unique ID for tracking purposes. Also, the system should have separate modules for <u>managing patients' admission</u> and <u>discharge summaries</u> , <u>duties of nurses</u> , <u>payments</u> , and <u>test reports</u> .
Design a sequence diagram for 'doctor appointment' module. | 10 |
| 2. | Assume that your client wants your team to create a broadband Internet bill payment platform BillPay.com, where customers can pay their Internet connection bill through online within minutes. Customers have to provide their <u>mobile number</u> and the <u>service provider</u> name (For eg., Airtel, ACT, Hathway etc..) for making <u>payment</u> . The customer information will be checked with the service provider's database and if the <u>details</u> are correct, the system prompts for the payment. Customers' can confirm the amount to be paid. Customers' can make the <u>payment either by debit</u> or credit card. After successful payment, the <u>message</u> will be <u>sent to the registered mobile</u> and <u>email id</u> for confirmation.
Identify the suitable objects and design an activity diagram for 'bill payment' module. | 10 |
| 3. | Identify and elaborate the most appropriate modularity metric for each of the given scenarios.
(i) 'Order placement' module sends the 'payment status' flag either as 'success' or 'failure' to the 'order dispatch' module. The 'order dispatch' module processes the <u>order depends on the payment status flag value received</u> (2 Marks).
(ii) Part of your program tries to look for the <u>customer details</u> . When <u>customer information is not found</u> , component adds <u>customer details directly by modifying the contents of the data structure containing the customer data</u> (2 Marks).
(iii) The 'cust_info' class passes the birth year of the customer to the 'cust_age' class to <u>determine the age of the customer</u> (2 Marks).
(iv) The 'customer_info' class connects to the <u>Aadhar database to retrieve the customer aadhar number</u> (2 Marks).
(v) In Customer Billing System the <u>print function of the customer billing accepts customer data structure as an argument, parses it, and prints the Customer ID and name</u> (2 Marks). | 10 |
| | Assumptions: The communication / interaction between the classes or methods are taken place between the modules. | |
| 4. | Identify the suitable architectural style used for designing the application mentioned in Question-2. Justify your choice and elaborate the same. | 10 |
| 5. | Create test cases (at least 3 positive & negative) for the 'bill payment' process mentioned in Question-2. | 10 |