

B. TECH. (COMPUTER SCIENCE & BUSINESS SYSTEMS) (CBCS - 2018 COURSE)

Computer Science & Business Systems

B.Tech. (CSBS) Sem - IV :SUMMER : 2023

SUBJECT : SOFTWARE DESIGN WITH UML

Day : Monday

Time : 10:00 AM-01:00 PM

Date : 29-05-2023

S-20454-2023

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 Compare object oriented analysis mode with structure analysis model. Why is it possible to describe real world using object model? Justify with suitable example. (10)

OR

Q.1 What are (UML) basic building blocks of unified modeling language? Give significance of each UML diagram. (10)

Q.2 What are different types of actors in use case diagram? Draw use case diagram for. (10)

OR

Q.2 A 'personal diary' mobile application manages the daily to-do tasks, appointments and contacts for a user. Design a class diagram by existing suitable assumption about the scope of the system. (10)

Q.3 Differentiate between sequence diagram and collaboration diagram. Also explain different types of message passed among objects in sequence diagram. (10)

OR

Q.3 Draw sequence diagram for login with user name and password showing alternate sequence. (10)

Q.4 Explain various elements of package diagram. Why is package diagram important? Compare with box Vs black box approach. (10)

OR

Q.4 Consider online library management system. Draw package diagram for this system. (10)

Q.5 Draw a state diagram that describes the process of passing a graduate course as a set of concurrent activities. The process is as follows: To pass, a student has to attend all but two lectures, present to the class a paper she read and complete a project, due on the last day of the term. To give her presentation, the student is given a date by the instructor, prepares her presentation, and gives it on the assigned day. At any time the student can drop a course. (10)

Make sure to define events, conditions, actions for transition in your diagram wherever necessary.

OR

P. T. O.

- Q.5 Draw activity diagram for the following scenario. (10)
- To give an exam, an instructor first notifies the students about the exam date and syllables. She then prepare examination paper along with sample answer book. She take sufficient photocopies for class and hands it out to student on scheduled time and location. The students write their answers for given questions and submit paper to instructor. The instructor then gives all exam paper to Teaching Assistant (TA) along with sample answer book and get it evaluated from TA. She then record marks and return the answer book to student.

Make sure every actor is participating in the process and all processes are carried out during each interaction.

- Q.6 Explain the need of component and deployment diagram. Also explain all the elements of component diagram. How emerging technologies such as cloud has affected use of deployment diagram. (10)

OR

- Q.6 Mac. Food is new restaurant chain which offers fast food to the customers. It uses an in-store computer to assist order taking, payment, food preparation, inventory and delivery. (10)

Order and payment are taken by staff using touch-screen display. Kitchen and delivery staff view order on display and register status of order using buttons of the keypad.

Inventory of the food and supplies is tracked by the computer system. The Restaurant Manager is able to configure the system to set menu items ingredient, priorities, inventory level and store set up.

Draw component diagram for above system.

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