

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

**B.Tech. (CSBS) Sem - IV :SUMMER- 2022
SUBJECT : SOFTWARE DESIGN WITH UML**

Day : Monday
Date : 20-06-2022

S-20454-2022

Time : 10:00 AM-01:00 PM
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.
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- Q.1** Define following: Unified Modeling design (UML) concepts with appropriate example. (10)
- i) Constraints ii) Behavioral things iii) Relationship
iv) Grouping things v) Stereotypes

OR

- Q.1** Explain unified process model in detail. (10)

- Q.2** Write the scope of 'Online book shopping system' and draw use case diagram. (10)

OR

- Q.2** Draw class diagram for banking system with two classes Account and Customer. (10)
Customer can open a saving or a current account and can do 'deposit' and 'withdraw' transaction. Identify suitable attributes and operations with appropriate visibility for each classes.

- Q.3** How a sequence diagram is related to use cases? Explain with suitable example. (10)
Differentiate synchronous and asynchronous messages.

OR

- Q.3** How interaction diagram used to model the dynamic aspect of the system. (10)
Draw sequence diagram for withdraw amount (minimum balance has to be checked) use case in a banking system.

- Q.4** A simple system is to be developed to support the management of exercises completed by students taking a course. Students first meet with the course tutor to register for the module, and during the course they submit a number of pieces of work. At any point, a student can find out from the system the marks they have received for any exercises already completed. The course tutor can enter a mark for a piece of work, and print out a summary of marks gained by all students on course. Enlist suitable use-cases and draw a suitable package diagram for the above system. (10)

OR

- Q.4** Compare and contrast package diagram with component diagram. Give one suitable example of each (by drawing diagrams) (10)

P. T. O.

Q.5 Draw an activity diagram for the system described below. **(10)**

Here is an extract from the documentation of a drawing tool for graphical work station. The objects in the package are divided into primitive objects and compound objects. The primitive objects are: ellipse, polyline, polygon, box and text. A primitive object can be moved rotated flipped vertically or horizontally, copied or erased. The text primitive may not be flipped. A compound object is composed of primitive objects. The primitive objects that constitute a compound cannot be individually modified, but they can be manipulated as an entity. A compound can be moved, rotated flipped horizontally or vertically, copied or erased. A compound that contains any boxes may only be rotated by 90 degrees.

OR

Q.5 Draw a sequence diagram for the system described below: **(10)**

Here is an extract from the documentation of a drawing tool for graphical work station. The objects in the package are divided into primitive objects and compound objects. The primitive objects are: ellipse, polyline, polygon, box and text. A primitive object can be moved rotated flipped vertically or horizontally, copied or erased. The text primitive may not be flipped. A compound object is composed of primitive objects. The primitive objects that constitute a compound cannot be individually modified, but they can be manipulated as an entity. A compound can be moved, rotated flipped horizontally or vertically, copied or erased. A compound that contains any boxes may only be rotated by 90 degrees.

Q.6 What is the difference between activity and sequence diagrams? Who will use them and for what purpose? **(10)**

OR

Q.6 What is the difference between component and deployment diagram? Who will use them and for what purpose? **(10)**

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