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Total No. of Pages: 02
Total No. of Questions: 09

MCA (Sem.-5th)

OBJECT ORIENTED ANALYSIS & DESIGN USING UML

Subject Code: MCA-504
Paper ID: [A3162]

Time: 3 Hrs. **Max. Marks: 100**

INSTRUCTIONS TO CANDIDATE:
Attempt Five questions in all, including Q.9. in Section-E,
Which is compulsory and selecting One each from Section-A to Secton-D.

Section –A

Q.1. (a) Give three major characteristics of object oriented modeling. Explain the concept of inheritance, constraints and packages, with a suitable example for each.

(b) What is concurrency? Explain 'aggregation concurrency' and 'concurrency within an object' represented by state model with suitable example. (10, 10)

Q.2. (a) Compare and contrast the concept of aggregation with the concept of Association and Generalization. Use suitable diagram to strengthen you answer.

(b) Define state modelling. What do you mean by an event in state diagram? Discuss various types of events. (10, 10)

Section –B

Q.3. (a) Explain the phases of System development life cycle giving its salient features.

(b) Why interaction mode is more important for application analysis? Briefly ation interaction model'. (10, 10)

Q.4. (a) Why software architecture is so important in system design? Enlist and briefly explain different architectural styles.

(b) Why class design is prepared? Explain following concepts with respect to class design:

(i) Bridging gap
(ii) Designing algorithms
(iii) Design optimization (10, 10)

Section –C

Q.5. Explain UML. What are the basic building blocks of UML? What are the various types of UML diagrams drawn to handle static and dynamic component of software under development? Develop a UML diagram for library information system. (20)

Q.6. (a) Prepare and object diagram for a computer network consisting of three LANs. Each pair of LANs is connected through a router. LANs contain 02, 05 and 06 nodes. Two LANs are CSMA/CD and one is FDDI based.

(b) What is an activity diagram? Explain how activity diagram focuses on flows driven by internal processing with the help of suitable example. (10, 10)

Section –D

Q.7. What do you mean by object oriented analysis and design? Discuss in detail the object-oriented analysis and design process with a suitable example. Compare and contrast different object oriented analysis and design methodologies. (20)

Q.8. Write short notes on:
(a) Plant UML and its features
(ii) User centric design and usability principles (10, 10)

Section –E (Compulsory Question (10x2=20)

Q.9. (a) Explain various purposes of medeling.

(b) Show the representation of class and object in case of UML.

(c) Define a state. Give an example of it.

(d) What is inheritance? Explain two benefits of inheritance.

(e) Explain the concept of delegation to share behavior.

(f) Explain the concept of reusable components and their use with reference to system design.

(g) What is the need of SRS document?

(h) What do you understand by open source tools?

(j) What is a sequence diagram? Explain through an example.

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