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Reg. No. :

Question Paper Code : 70400

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

First Semester

Computer Science and Engineering

CP5154 – ADVANCED SOFTWARE ENGINEERING

(Common to M.E. Computer Science and Engineering (With Specialization in Networks)/M.E. Multimedia Technology/M.E. Software Engineering)

(Regulations 2017)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions

PART – A   (10×2=20 Marks)

1. What is prototyping ?

2. Define the term, "software risk".

3. What is a finite state machine ?

4. State the use of statechart diagram.

5. Define abstraction.

6. What are design patterns ?

7. Outline the need for regression testing.

8. Define debugging.

9. What is DevOps?

10. Define cloud computing.

PART – B   (5×13=65 Marks)

11. a) i) Outline the activities involved in the software development life cycle with a diagram.   (8)

   ii) Compare the waterfall and spiral software development life cycle models.   (5)

(OR)

b) What is software configuration management ? Elaborate the activities involved in software configuration management. (13)

12. a) What is a use case diagram ? Elaborate the steps in modeling a use case diagram with an example. (13)

(OR)

b) i) Model a class diagram for the following scenario :
   "Happy life" is a life insurance company that offers various policies to its customers. The company manipulates and maintains the details of various policies, Policyholders, agents and transactions. (6)

   ii) Outline the steps in modeling a data flow diagram with an example. (7)

13. a) What is coupling ? Outline the types of coupling with an example. (13)

(OR)

b) Elaborate the Model-View-Controller architecture with an example and highlight its advantages. (13)

14. a) Explain unit and integration testing techniques with an example. (13)

(OR)

b) i) Compare black box and white box testing. (4)

   ii) Elaborate symbolic execution with an example. (9)

15. a) Elaborate the DevOps methodology. (13)

(OR)

b) i) Comment on the operational feasibility of DevOps. (7)

   ii) Outline the process of using cloud as a platform for development and deployment. (6)

PART – C   (1×15=15 Marks)

16. a) An online auction server is a program which allows a person to place an advertisement for an item for sale online and buyers to bid for them. The buyers 'view' the items on the server, and if they want to bid for it, they need to have a client to lodge a bid. The server then notifies other potential buyers of the received bid, so that they can bid against it. If no further bids are received in a given time after the last bid, the server notifies all the potential buyers that the sale is finalized.

   The salient features of an online auctioning system should be :

   • A platform where people can search for products they intend to buy.

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- The products should have a profile that shows the details.
- Sellers should be able to add their products to existing list.
- Potential buyers can bid for an item.
- Security: password mechanism has been used to prevent unauthorized access.
- Administrator can manage user and product profiles

Use appropriate UML modeling to represent the above scenario.   (15)

(OR)

b) PrintMedia is a publishing and printing business corporate. The manager wants to convert the business to online media. One has to register online to avail their services -publishing and printing. Registered end-user can upload the draft in pdf, jpeg, docx file formats which will be published online. The end-user can also opt for printing the draft by submitting the required specifications. The printed material will be sent to the customer's shipping address on Cash on Delivery basis (if amount is less than Rs. 2,000) or payment can be made through debit/credit cards (for any amount).

(i) Assuming yourself as a requirement analyst (Business analyst), identify the software requirements.   (8)

(ii) Draw an appropriate UML diagram to represent the activities of an enduser.   (7)

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