Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 40379

M.E./M.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

First Semester

Computer Science and Engineering

CP 5154 — 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

(Codes/Tables/Charts to be permitted, if any, may be indicated)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define : Software Engineering.
2. Why are software systems complex?
3. List the types of requirements.
4. What is an activity?
5. Differentiate Coupling and Cohesion.
6. What is Adapter Pattern?
7. Why Code Inspections can be so Effective?
8. Differentiate Verification and Validation from Debugging.
9. What is DevOps?
10. Define : Components in DevOps.

PART B — (5 × 13 = 65 marks)

11. (a) Examine the Boehm's Spiral development in software development with specific objectives for each phase. (13)

Or

(b) Summarize the activities performed during project planning with project plan document structure. (13)

12. (a) How elicitation of requirements is done in Requirements Engineering? Explain. (13)

Or

(b) Consider an Online Real Estate System that contains features as advertisement of properties, purchase of properties, new announcements, Schemes, Online payment and reports. Find out use cases and actors from this system and draw the primary and at least two secondary use case diagrams for it. (13)

13. (a) Demonstrate the use of the following design patterns :

(i) Publish-Subscribe (4)

(ii) Strategy (4)

(iii) Proxy. (5)

Or

(b) Illustrate the different architectural styles applied in software development with an example for each. (13)

14. (a) Elaborate the Black box testing process in revealing errors in a software system. (13)

Or

(b) Demonstrate the use of program analysis and symbolic execution in the testing process. (13)

15. (a) Examine the Micro Service architecture style with its models involved in DevOps. (13)

Or

(b) Show how canary testing and A/B testing are done in DevOps to handle versions. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Following figure sets out a number of activities, durations and dependencies. Design an activity chart and a bar chart showing the project schedule. (15)

Task	Duration	Dependencies
T1	10	
T2	15	T1
T3	10	T1, T2
T4	20	
T5	10	

Task	Duration	Dependencies
T6	15	T3, T4
T7	20	T3
T8	35	T7
T9	15	T6
T10	5	T5, T9
T11	10	T9
T12	20	T10
T13	35	T3, T4
T14	10	T8, T9
T15	20	T12, T14
T16	10	T15

Or

(b) (i) You are asked to design an application such as "Ola Cab Booking" using OOD. Identify the type of design pattern applied in this type of system and explain its functionality with a neat diagram. (8)

(ii) Consider that, you have been involved in a "WordPad Application" which should include redo/undo operations while text editing. Which design pattern could be applied for it? Show it by means of a neat diagram. (7)

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