(15 Marks)

Q.4 Attempt the following (Any three)

a) Explain the basic principles behind project scheduling.

b) Draw a collaboration diagram for contacting a person using a mobile phone.

c) Draw an activity network for the project given below :

Activities	Duration	Precedents
A	2	-
B	3	A
C	3	-
D	2	C
E	3	D, J
F	2	E, B
G	2	F
H	4	-
J	2	H

d) State the difference between functional –oriented and object-oriented approach of system design.

e) What are the characteristics of a good SRS ?

(15 Marks)

Q.5 Attempt the following (Any three)

a) Explain requirement validation.

b) Explain aggregation and composition with suitable example.

c) State and explain the Quality metrics.

d) Write short notes on code inspection.

e) State the difference between white box testing and black box testing.

□□□

Appendix A

Solved University Question Paper of April 2018

Q. 1 (a) Multiple Choice Questions :

(i) Diagrams which are used to distribute files, libraries and tables across topology of hardware are called _____. **(1 Mark)**

(a) Deployment diagrams (b) use case diagrams

(c) sequence diagrams (d) collaboration diagrams

Ans.: (a) Deployment diagrams

(ii) The UML support event-based modelling using ____ diagrams. **(1 Mark)**

(a) Deployment (b) Collaboration

(c) State chart (d) All of the mentioned

Ans. : (c) State chart

(iii) The _____ model stipulates that the requirements be completely specified before the rest of the development can processed.

(a) Waterfall (b) Rapid Application Development (RAD)

(c) Iterative Development (d) Incremental Development

Ans. : (a) Waterfall

(iv) Project Risk factor is considered in which model ? **(1 Mark)**

(a) Spiral model (b) Waterfall model

(c) Prototyping model (d) None of the above

Ans. :(a) Spiral model

(v) Test Conditions are derived from _____. **(1 Mark)**

(a) Test Design (b) Test Cases

(b) Test Data (d) Specifications

Ans. : (d) Specifications

Q. 1 (b) Fill in the blanks :

(i) ISO stands for _____. **(1 Mark)**

Ans. : International Standards Organization.

(ii) SRS stands for _____. **(1 Mark)**

Ans. : Software Requirement Specification

(iii) SQA stands for _____. **(1 Mark)**

Ans. : Software Quality Assurance

(iv) COCOMO stands for _____. **(1 Mark)**

Ans. : Constructive Cost Model

(v) CMM stands for _____. **(1 Mark)**

Ans. : Capability Maturity Model

Q. 1 (c) Answer in 1-2 lines :

1. What is software re-engineering ? **(Chap. 1, 1 Mark)**

Ans. : [Hint : Add at the end of Section 1.4]

Reorganizing and modifying existing software systems to make them more maintainable

Re-structuring or re-writing part or all of a legacy system without changing its functionality

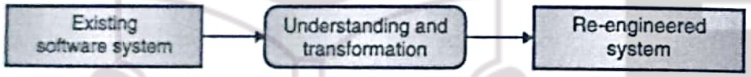

Fig. 1-Q. 1(c)(1) : Software re-engineering

2. Define uml in software engineering. *(Ans. : Refer Section 4.2.1)* **(Chap. 4, 1 Mark)**
3. What is software engineering ? *(Ans. : Refer Section 1.4)* **(Chap. 1, 1 Mark)**
4. What is software quality in software engineering ? *(Ans. : Refer Section 10.1)* **(Chap. 10, 1 Mark)**
5. What is verification and validation ? *(Ans. : Refer Section 11.1)* **(Chap. 11, 1 Mark)**

Q. 2 (a) State and explain the activities in SDLC. *(Ans. : Refer Section 2.3)* **(Chap. 2, 5 Marks)**

Q. 2 (b) Draw use case diagram for Car Rental System. **(Chap. 4, 5 Marks)**

Ans. : [Hint : Add at the end of Section 4.3]

Use case diagram for car rental system :

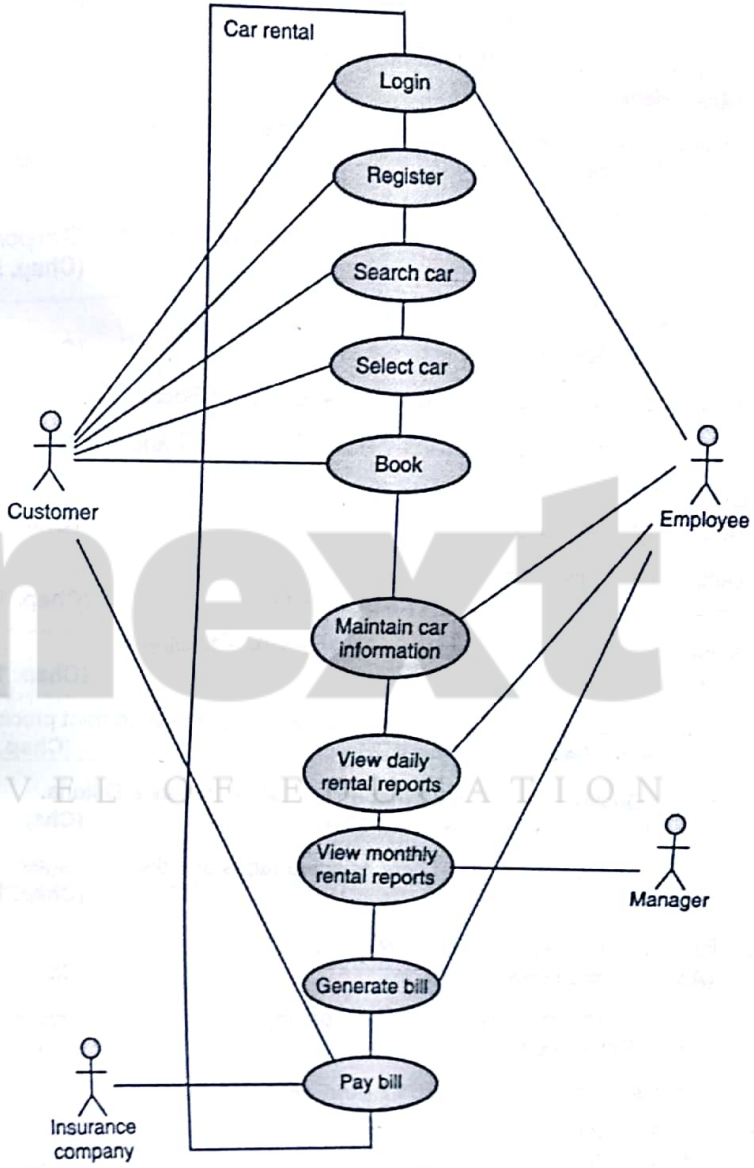

Fig. 1-Q. 2(b) : Use case diagram for car rental system

Q. 2 (c) What is SRS ? State and explain its type. *(Ans. : Refer Sections 3.5.1 and 3.5.3)* **(Chap. 3, 5 Marks)**

Q. 2 (d) What is component diagram ? Draw and explain symbols for the same. *(Ans. : Refer Section 4.10.1)* **(Chap. 4, 5 Marks)**

Q. 2 (e) Explain Agility and write its advantages and disadvantages. *(Ans. : Refer Sections 2.10 and 2.10.1)* **(Chap. 2, 5 Marks)**

Q. 2 (f) How to draw and where to use Deployment diagram ? *(Ans. : Refer Section 4.10.2)* **(Chap. 4, 5 Marks)**

Q. 3 (a) State the disadvantages of LOC. How is it different from COCOMO ? *(Ans. : Refer Sections 7.6 and 7.6.1)* **(Chap. 7, 5 Marks)**

Q. 3 (b) Explain Software user interface design. *(Ans. : Refer Sections 5.2.2(4, 5) and 5.10 (Human Interaction Component))* **(Chap. 5, 5 Marks)**

Q. 3 (c) Write the scope of software metrics. *(Ans. : Refer Sections 6.1.1 and 6.1.2)* **(Chap. 6, 5 Marks)**

Q. 3 (d) Explain software design specification. *(Ans. : Refer Section 5.7)* **(Chap. 5, 5 Marks)**

Q. 3 (e) Explain Project Scheduling. *(Ans. : Refer Sections 8.1 and 8.2)* **(Chap. 8, 5 Marks)**

Q. 3 (f) Explain Empirical Estimation model. *(Ans. : Refer Sections 7.6 and 7.6.1)* **(Chap. 7, 5 Marks)**

Q. 4 (a) Define Test Case, Test Oracle, Test Plan. *(Ans. : Refer Sections 11.12, 11.5 and 11.11)* **(Chap. 11, 5 Marks)**

Q. 4 (b) What are the errors found while doing Black Box Testing ? *(Ans. : Refer Section 11.9)* **(Chap. 11, 5 Marks)**

Q. 4 (c) What is Risk management ? Explain Software risk management process. *(Ans. : Refer Sections 9.1 and 9.3)* **(Chap. 9, 5 Marks)**

Q. 4 (d) What is Quality Assurance ? What are Quality Assurance Criteria. *(Ans. : Refer Sections 10.3.1 and 10.3.4)* **(Chap. 10, 5 Marks)**

Q. 4 (e) What is Structural testing ? Write its advantages and disadvantages. *(Ans. : Refer Section 11.8)* **(Chap. 11, 5 Marks)**

Q. 4 (f) Explain Capability Maturity Model. *(Ans. : Refer Section 10.10)* **(Chap. 10, 5 Marks)**

Q. 5 (a) State all and write down a short note on any 3 fact finding techniques. *(Ans. : Refer Section 3.8)* **(Chap. 3, 5 Marks)**

Q. 5 (b) What is coupling and cohesion ? *(Ans. : Refer Section 5.11)* **(Chap. 5, 5 Marks)**

Q. 5 (c) Explain Verification and Validation. *(Ans. : Refer Section 11.1)* **(Chap. 11, 5 Marks)**

Q. 5 (d) Define and explain ISO Quality Standards. *(Ans. : Refer Section 10.9.2)* **(Chap. 10, 5 Marks)**

Q. 5 (e) What is Cyclomatic complexity ? Explain with an example. *(Ans. : Refer Section 6.9)* **(Chap. 6, 5 Marks)**

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Note