Model Question Paper - I

Q. 1 Attempt all(Each of 5 Marks) : **(15 Marks)**

a. Choose the correct answer

1) What is a Software ?

a) Software is a programming language that is used to build an application

b) Software is a set of instructions to acquire inputs and to process them to produce the desired output

c) Software encompasses of only instructions

d) Software wears out as the time passes due to the effects of dust, vibration, temperature extremes and many such environmental problems.

e) Software encompasses of disks, disk drives, display screens, keyboards, printers and chips

2) What are the tasks in requirement engineering ?

a) Inception, elicitation, elaboration, negotiation, specification, validation and management

b) Inspection, elicitation, elaboration, specification, validation and monitoring

c) Elicitation, elaboration, negotiation, specification, validation and management

d) Inception, elicitation, elaboration, specification, validation and monitoring

e) Inception, elicitation, elaboration, negotiation, specification, validation

3) What is project management ?

a) The planning, organizing, monitoring and controlling of all aspects of the project in a continuous process in order to achieve its objectives

b) The planning and application of business and financial models used to control all aspects of the project for the purpose of meeting project objectives

c) The application of knowledge, skills, tools and techniques to project the activities for the purpose of meeting or exceeding stakeholder objectives

d) Both A and C

4) Project schedules can be displayed graphically as :

a) Gantt charts b) Precedence diagrams

c) Milestone charts d) All of the above

5) Which term refers to hiding of information ?

a) Inheritance b) Encapsulation c) Coupling

d) Cohesion e) Messaging

b. Fill in the blanks

a) The _____ model is also called as classic life cycle.

b) CASE is short for _____

c) The main objective of Software testing is to find _____

d) The two categories of requirements are _____ and _____

e) _____ is a framework for the iterative process of planning, tracking and reacting to risk.

c. Answer in one sentence

a) What is meant by coupling ?

b) Define the term Abstraction.

c) What is top down estimating approach based on ?

d) What is the need of Attribute Hiding Factor ?

e) State the three formulae used to determine the cyclomatic complexity.

Q.2 Attempt the following (Any three) **(15 Marks)**

a) What is meant by concurrent development model ?

b) Define legacy software.

c) What is agility ? Explain XP in detail.

d) What is SRS ? Explain need & benefits of SRS.

e) What is Risk Management ? Explain the different stages involved in Risk Management.

Q.3 Attempt the following (Any three) **(15 Marks)**

a) Write a short note on spiral model.

b) What is Test First Development ? State its advantages.

c) Give various approaches for identifying classes. Explain any 2 in brief.

d) Explain COCOMO model in detail with example. Give its advantages.

e) Calculate Cyclomatic Complexity of code which accepts 3 integer values from the user as input and sort them in ascending order. Find various paths and design test cases.

Q.4 Attempt the following (Any three) **(15 Marks)**

a) What is meant by Quality Function Deployment ?

b) Prepare an Activity diagram for booking a flight through Airline Reservation system.

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

Activities	Duration	Precedents
A – Selection of hardware	6	-
B – design of software	4	-
C – install hardware	3	-

Activities	Duration	Precedents
D – code an test software	4	A
E – file take on	3	B
F – write user manual	10	-
G – user training	3	E, F
H – install and test the system	2	C, D

d) Explain the concept of Make/Buy decision

e) Explain the McCall's Quality factors.

Q.5 Attempt the following (Any three) **(15 Marks)**

a) What is an elicitation? Discuss the problems that are encountered during elicitation.

b) Draw a sequence diagram for online ordering of home delivery pizza.

c) Explain the various types of testing metrics

d) Write short notes on code review.

e) Explain CMMI framework in detail.

Model Question Paper - II

Q.1 Attempt all (Each of 5 Marks) **(15 Marks)**

a. Choose the correct answer

1) "Are we building the right product ?". This statement best suits which of the following terms ?

a) Validation b) Verification c) CMMI d) COCOMO model

e) White box testing

2) In which of the following XP tests is the test code developed before actual task code is developed ?

a) Incremental test development from scenario
b) User involvement in test development and validation
c) Test first development
d) The use of automated test harness

3) Which step in the risk management process defines the probability and impact of each risk to determine the severity ?

a) Risk identification b) Risk analysis
c) Risk response planning d) Risk tracking and control

4) What is a critical path ?

a) Longest path in the network b) Path with the activities having float or slack time
c) Longest time to complete the project d) All of the above

5) Which of the following UML diagrams best describes the dynamic behavior of the system ?

a) Class diagram b) State chart diagram
c) Use Case diagram d) Deployment diagram

b. Fill in the blanks

a) _____ is the process of hiding the details and exposing only the essential features of a particular object.

b) CMMI is short for _____

c) The first phase of waterfall model is _____

d) Whether the system is available 99.9% of time or not is a _____ type of requirement

e) Compiler and Interpreter are _____ types of software.

c. Answer in one sentence

a) What is meant by cohesion ?

b) What does the radius of the spiral indicate in the spiral model ?

c) Define software engineering.

d) Define verification and validation.

e) State the advantage of prototype model.

Q.2 Attempt the following (Any three) **(15 Marks)**

a) State the difference between : Classic life cycle model and Prototyping model

b) What is the technical feasibility study?

c) What is agility ? Explain Test First Development model.

d) What is the role of SQA. State the tasks of SQA.

e) What is Risk Identification ? Explain the need of RMMM plan.

Q.3 Attempt the following (Any three) **(15 Marks)**

a) Define the characteristics of a software.

b) Explain the difference between PERT and CPM

c) What is pair programming? Why is it important ?

d) Explain how COCOMO - II is different from COCOMO model.

e) Calculate Cyclomatic Complexity of code which accepts a positive number from the user as input and displays whether it is an even or odd number. Find various paths and design test cases.

(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.