T4BSc (IT) 38 / Software Eng & Test (R-18)

101

Q. P.Code: 35531

(2 ½ Hours) **[Total Marks: 75]**

N.B: (1) All questions are compulsory.
(2) Figures to the right indicate marks.
(3) Illustrations, in-depth answers and diagrams will be appreciated.
(4) Mixing of sub-questions is not allowed.

Q1. **Attempt the following (any THREE):** (15)
(A) What are the different myths and realities about software?
(B) Give the various application areas of software.
(C) Discuss the characteristics of software.
(D) Give the basic phases in the software-development life-cycle.
(E) Explain the waterfall model in detail with the help of a diagram. State its advantages and also its limitations.
(F) What are the major advantages of first constructing a working prototype before developing the actual product?

Q2. **Attempt the following (any THREE):** (15)
(A) What is requirements elicitation? Discuss any two techniques in detail.
(B) Define:
(*i*) Data-flow diagram (*ii*) Decision table
(C) Draw the E-R diagram for a hotel reception desk management.
(D) What is software quality assurance?
(E) Briefly explain principles of Agile development.
(F) Explain, in detail, the SEI-CMM model.

Q3. **Attempt the following (any THREE):** (15)
(A) Discuss the term verification in reference to system design.
(B) Compute the function-point value for a project with the following Information-domain characteristics.
Number of user Inputs: 32
Number of User output: 60
Number of User Inquiries: 24
Number of files: 8
Number of external interface: 2
Assume that all complexity adjustment values are average.
(C) Define architectural design. What are the objectives of architectural design?
(D) Define:
(*a*) Product metrics (*b*) Process metrics (*c*) Project metrics
(E) Define the various principles of testing.
(F) What is the difference between black-box testing and white-box testing?

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Q4. **Attempt the following (any THREE):** **(15)**

(A) Explain in brief the various static testing strategies.

(B) Explain Computer-Aided Software Engineering (CASE) and the various types of CASE tools.

(C) Define reverse engineering. Discuss the levels of reverse engineering.

(D) Describe the various programming styles in software engineering.

(E) What are the advantages of writing structured programs versus unstructured programs?

(F) Explain Terms Error, Fault, Failure, Bug, and Crash. Explain how they are related with each other.

Q5. **Attempt the following (any THREE):** **(15)**

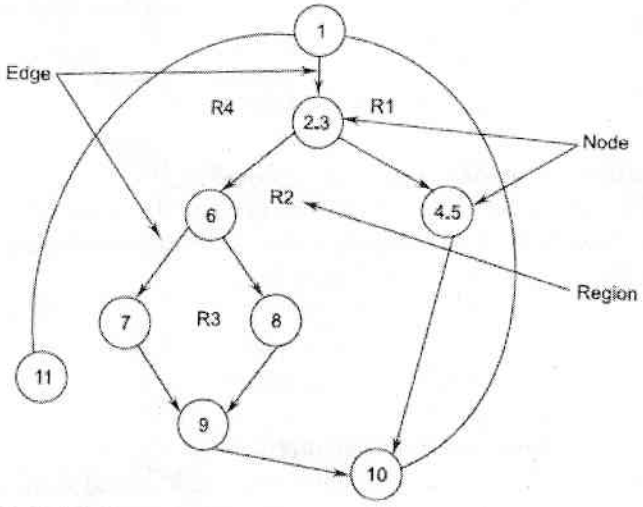
(A) What is a software crisis? Explain the problems of a software crisis.

(B) Write a short description of the evolutionary development model. Also state its advantages.

(C) What is an SRS? What are the components of an SRS?

(D) What is a DFD? Explain some of the symbols used to draw a DFD.

(E) A set of independent paths for the flow graph illustrated in Figure is



Compute Cyclomatic complexity.

(F) What is a fourth-generation language? How does it differ from a third-generation language?
