Bihar Engineering University, Patna
End Semester Examination - 2022

Course: B.Tech. | *Semester: V* | *Time: 03 Hours*
Code: 105504 | *Subject: Software Engineering* | *Full Marks: 70*

Instructions:-

(i) The marks are indicated in the right-hand margin.
(ii) There are NINE questions in this paper.
(iii) Attempt FIVE questions in all.
(iv) Question No. 1 is compulsory.

Q.1 *Choose the correct answer of the following (Any seven question only):* **[2 x 7 = 14]**

(a) The spiral model was originally proposed by
(i) IBM (ii) Barry Boehm
(iii) Pressman (iv) Royce

(b) Measure of reliability is given by
(i) mean time between success (ii) MTBF
(iii) mean reliable (iv) MTTR

(c) Which of the following is not a use of a CASE tool?
(i) It supports structured analysis and design (SA/SD)
(ii) It maintains the data dictionary
(iii) It checks whether DFDs are balanced or not
(iv) It compiles with the available system.

(d) Name of an evaluation technique to assess the quality of test cases is
(i) mutation analysis
(ii) validation
(iii) verification
(iv) performance analysis

(e) What is the most popular model for student program?
(i) Waterfall model
(ii) Built – and – fix model
(iii) Spiral model
(iv) Rational unified model

(f) Which of the following is not a part of bug report?
(i) Test case (ii) Output
(iii) Software version (iv) LOC

(g) Independent modules are easier to maintain and test because of
(i) code modification is limited (ii) reusable modules are possible
(iii) error propagation is reduced (iv) All of the above

(h) In size-oriented metrics, metrics are developed based on the
(i) number of functions
(ii) number of user inputs
(iii) number of lines of code
(iv) amount of memory usage

(i) Classes communicate with one another via
(i) processed information (ii) interfaces (iii) messages (iv) coupling

(j) Software is not considered to be collection of executable programming code, associated libraries and documentations.
(i) Statement is true (ii) Software is only data structures with algorithms
(iii) Statement is false (iv) Statement underestimates software

P.T.O.

Q.2 Explain in detail the classical waterfall model with help of a neat and labelled diagram. [14]

Q.3 (a) What is prototyping model? Explain the problems and advantages of prototyping in detail. [7]

(b) Develop a test case for any testing technique for 'student admission system'. [7]

Q.4 (a) Define cohesion and coupling. Explain various types of each of them. [7]

(b) What are CASE tools? With a suitable diagram, explain the categories of CASE tools. [7]

Q.5 What are the different COCOMO models? Explain the phases involved in the detailed COCOMO model. [14]

Q.6 (a) What are the types of user-interface design? [7]

(b) Explain the stages of object-oriented design process. [7]

Q.7 Write short notes on the following: [5+5+4=14]

(a) Unified modelling language

(b) Object-oriented analysis modelling

(c) Object-oriented design concepts and methods

Q.8 Explain coding standards, coding guidelines and code review techniques in detail. [14]

Q.9 (a) What is software quality? Discuss software quality attributes. [7]

(b) Discuss the differences between object-oriented and function-oriented designs. [7]