

Bihar Engineering University, Patna
End Semester Examination - 2022

Course: B.Tech.
Code: 105504

Semester: V
Subject: Software Engineering

Time: 03 Hours
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]

