

Total No. of printed pages = 3

BCA 171401

Roll No. of candidate

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BINA CHOWDHURY CENTRE FOR STUDENT WELFARE
(GIMT & GIPS)
Azara, Hatkhowapara,
Guwahati - 781017

2022

B.C.A. 4th Semester End-Term Examination

SOFTWARE ENGINEERING

(New Regulation)

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

Answer question No. 1 and any *four* from the rest.

1. Answer the correct option from the following : (10 × 1 = 10)
- (i) What is Software Engineering?
- (a) Designing a software
 - (b) Testing a software
 - (c) Application of engineering principles to the design a software
 - (d) None of the above
- (ii) AMC stands for
- (a) Annual maintenance Cost
 - (b) Annual maintain Cost
 - (c) Average maintenance Cost
 - (d) None of the above
- (iii) Which of the following is known as meta model?
- (a) Spiral model
 - (b) Iterative model
 - (c) RAD model
 - (d) Prototype model

[Turn over

- (iv) Characteristics of good SRS document
- (a) Concise
 - (b) Unambiguous
 - (c) Structured
 - (d) All of the above
- (v) Verification is the process of determining whether the input of one phase of software development conforms to that of its previous phase
- (a) True
 - (b) False
- (vi) Unit testing is referred to as testing in the _____, whereas integration and system testing are referred to as testing in the _____.
- (a) small, large
 - (b) large, small
 - (c) None of the above
- (vii) DFD stands for
- (a) Data Found Diagrams
 - (b) Database flow diagram
 - (c) Data fault diagram
 - (d) None of the above
- (viii) What does a data store symbol in the Data Flow Diagram signify?
- (a) Logical File
 - (b) Physical File
 - (c) Data Structure
 - (d) All of the above
- (ix) Branch coverage-based testing is stronger than statement coverage-based testing
- (a) True
 - (b) False
- (x) Unit testing is undertaken after a module has been coded and reviewed
- (a) True
 - (b) False
2. (a) What is the principal aim of the software engineering discipline? Explain in detail. (5)
- (b) What are the major differences between the exploratory and modern software development practices? Explain the advantages of exploratory software development practices. (5)
- (c) What is Spiral model? Explain all the phases of it in details. (1+4=5)

3. (a) Briefly explain the job responsibilities for managing software products. (5)
(b) What are empirical estimation techniques? Explain their types. (1+4=5)
(c) Briefly explain the basic COCOMO model in detail. (5)
4. (a) What is cohesion and coupling? What is functional independence? (3+2=5)
(b) What is DFD? Explain the components of DFD? Differentiate between DFD and UML diagram. (1+2+2=5)
(c) What do you understand by system testing? What are the different kinds of system testing that are usually performed on large software products? (2+3=5)
5. Write short notes of the following (any three): (3 × 5 = 15)
(a) Verification and Validation
(b) Aggression
(c) Encapsulation
(d) Class and Object
6. (a) What is Usecase diagram? Draw the Usecase diagram of Super Market Prize scheme. (1+4=5)
(b) For a software that computes the square root of an input integer that can assume values in the range of 0 and 5000. Determine the equivalence classes and the black box test suite. (5)
(c) Assume that the size of an organic type software product has been estimated to be 64,000 lines of source code. Assume that the average salary of a software developer is Rs. 25,000 per month. Determine the effort required to develop the software product, the nominal development time, and the cost to develop the product. (5)
7. (a) Draw a labelled DFD for student management system. Clearly show the context diagram and its hierarchical decompositions up to level 1. (Context diagram is the Level 0 DFD). (5)
(b) Explain all the phases of iterative waterfall model. How can you differentiate it with classical waterfall model? (7+3=10)

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