

Name :

Roll No. :

Invigilator's Signature :

CS/BCA/SEM-6/BCAE-602A/2012

2012

SOFTWARE ENGINEERING

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

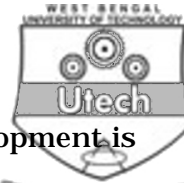
GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

- i) Software deteriorates rather than wears out because
 - a) Software suffers from exposure to hostile environments
 - b) Defects are more likely to arise after software has been used often
 - c) Multiple change requests introduce errors in component interactions
 - d) Software spare parts become harder to order.



- ii) The prototyping model of software development is
- a) a reasonable approach when requirements are well defined
 - b) a useful approach when a customer cannot define requirements clearly
 - c) the best approach to use for projects with large development teams
 - d) a risky model that rarely produces a meaningful product.
- iii) What activity does a software project manager need to perform to minimize the risk of software failure ?
- a) Double the project team size
 - b) Request a large budget
 - c) Allow absolutely no schedule slippage
 - d) Define milestones and track progress.
- iv) The testing technique that requires devising test cases to exercise the internal logic of a software module is called
- a) behavioural testing
 - b) black-box testing
 - c) grey-box testing
 - d) white-box testing.



- v) Acceptance tests are normally conducted by the
- a) developer
 - b) end users
 - c) test team
 - d) systems engineers.
- vi) Usability questionnaires are most meaningful to the interface designers when completed by
- a) customers
 - b) experienced programmers
 - c) product users
 - d) project managers.
- vii) Three categories of risks are
- a) business risks, personnel risks, budget risks
 - b) project risks, technical risks, business risks
 - c) planning risks, technical risks, personnel risks
 - d) management risks, technical risks, design risks.
- viii) The data flow diagram
- a) depicts relationship between data objects
 - b) depicts functions that transform the data flow
 - c) specified major logical decisions as they occur
 - d) indicates system reactions to external events.



- ix) The entity relationship diagram
 - a) depicts relationship between data objects
 - b) depicts functions that transform the data flow
 - c) indicates how data are transformed by the system
 - d) indicates system reactions to external events.

- x) To achieve high modularity of software components you need
 - a) high coupling and high cohesion
 - b) high coupling and low cohesion
 - c) low coupling and high cohesion
 - d) low coupling and low cohesion.

- xi) At the end of a formal technical review all attendees can decide to
 - a) accept the work product without modification
 - b) modify the work product without further review
 - c) reject the product due to severe errors
 - d) all of these.



GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Explain the RAD model.
3. Explain the role and functions of a Systems Analyst in the overall project development.
4. State the different phases of SDLC.
5. Explain prototype model.
6. Differentiate between Hardware and Software characteristics.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Discuss the salient features of ISO 9000 in software industries. Why is it suggested CMM is better choice than ISO 9001 ? Discuss various key process areas of CMM of various maturity levels. $5 + 5 + 5$
8. a) What is CASE tool ? 2
b) What functions are performed by the services that are coupled with the CASE repository ? 6

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- c) What is balancing of DFD ? 3
- d) Distinguish between logical DFD and physical DFD. 4
9. a) What do you mean by McCabe cyclomatic complexity ?
Give example with control flow graph. 6
- b) Define cohesion and coupling with their classification.
For a good design "high cohesion and low coupling is required". Explain it with reason. 9
10. a) How many types of project are present according to
COCOMO ? Give example. 5
- b) Consider an organic project which has been estimated
to be 50,000 lines of source code. Assuming average
salary of a software engineer as Rs. 20,000 per month,
determine effort required to develop the software
product, total cost and nominal development time. 5
- c) What is risk analysis ? What is its significance in
software engineering ? 5



11. Write short notes on any *three* of the following : 3 × 5

- a) Software Quality Assurance
- b) Alpha and Beta testing
- c) Black box and White Box testing
- d) Test automation
- e) RAD model.

