

This question paper contains 2 printed pages

Your Roll No

6135

### MCA/ IV Sem.

### Paper MCA – 402 – SOFTWARE ENGINEERING

Time 3 hours

**J**  
Maximum Marks 60

(Write your Roll No on the top immediately on receipt of this question paper)  
Attempt all questions Parts of a Question must be answered together

1

- a) Is it possible to have a system that can automatically verify completeness of an SRS document? Explain your answer [2]
- b) What does a "win-win" mean in the context of negotiation during the requirement engineering process? [2]
- c) Which of the two parameters a or b in  $b^* KDKOC^a$ , has more evident impact on the values of effort in the basic COCOMO model. Justify your answer [2]
- d) Quality and reliability are related concepts but are fundamentally different in a number of ways. Describe the differences [3]

2

- a) What do you understand by project risks? Explain the concept of Risk Mitigation, Monitoring and Management with the help of examples [5]
- b) What are formal methods? Under what circumstances formal methods are preferred? [3]
- c) You have been testing a module for 4 days and found one fault. What does this tell you about the existence of other faults? [2]

3

- a) Besides counting errors and defects, are there other countable characteristics of software that imply quality? What are they and can they be measured directly? [4]
- b) List KPAs of various levels of a SW-CMM [4]
- c) Assume that testing (and bug fixing) effort is proportional to the number of errors detected (regardless of the nature of error). Suppose that testing detects 90% of the total errors in the software (10% remain undetected). By adding design and code reviews, suppose the cost of the design and coding phases increases by 10% each (from the base distribution given earlier) and 10% of the errors are detected in design reviews and 30% in the code reviews. (So testing now detects only 70% of the errors.) What is the impact on the overall cost of reviews? [4]

4

- a) Can a program be correct and still not exhibit good quality? Explain [2]
- b) Define cyclometric complexity and explain its use in software testing [3]
- c) A program reads three integer values. The three values are interpreted as representing the lengths of the sides of a triangle. The program prints a message stating whether the triangle is scalene, isosceles, or equilateral. Draw a flowchart of the program. Develop a set of test cases that you feel will adequately test this program [5]

5

- Write short notes on the following
- a) Agile process models
  - b) User interface design
  - c) Software Quality

[5]

6

- Distinguish between the following
- a) Testing and debugging
  - b) Reactive risk management and proactive risk management
  - c) Top down integration and bottom up integration

[9]

[9]

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