K 1057

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004.

Fifth Semester

Information Technology

IF 355 — SOFTWARE QUALITY MANAGEMENT

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Define Quality as defined by International Standards Organisation?

2.   What are the five methods detailed by Watts (1987) as part of the MQ Approach?

3.   "Quality is conformance to requirements, both explicit and implicit". Explain the terms "explicit" and "implicit" requirements in the context of Gavin's views of quality.

4.   Explain Kitchenham's Quality profile with diagram.

5.   Explain COQUAMO toolset with diagram.

6.   Name the five components of a QMS as listed by the ISO definition.

7.   Enlist Ishikawa's 7 basic techniques for monitoring and controlling processes.

8.   What are the Capability Levels within SPICE?

9.   How do software process metrics differ from software project metrics?

10. What is meant by backlog management index?

PART B — (5 × 16 = 80 marks)

11. (i)   What do you understand by the Software Capability Maturity Model (SW-CMM). Name the five stages of the SW-CMM.

     (ii) What are the characteristics of each of the 5 stages of the SW-CMM?

12. (a)   State and explain the Garvin's five views of quality.

Or

     (b)   State and explain the *Crosby's View of Quality, McCall's Model of Quality.*

13. (a) Describe three historical perspectives of Quality Management Systems and outline the work of three 'gurus' of quality management.

Or

(b) Discuss ISO 9001.

14. (a) (i) Explain the need for $W^5H\,H$ principle. (8)

(ii) List the critical practices of Quality Management System. (8)

Or

(b) Explain the roles of Process/Product/Project/People in software development management spectrum. (16)

15. (a) Describe briefly the process metrics, project metrics, product metrics.

Or

(b) Discuss metrics for software quality.

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