

MCA (Sem I) CBGS

Software Engineering

20/11/2015

Q.P. Code : 25313

Marks: 80Marks

NOTE: I) Question no.1 is compulsory

II) Attempt any 4 out of the remaining questions

III) Use of calculator is allowed.

- Q.1 (a) Consider the database application with following information:  
It has 5 screens with 5 views each and 6 data tables for 3 servers and 4 clients. It may generate 2 reports of 5 sections each from 6 data tables for 2 servers and 3 clients. There is 10% reuse of object points. Developers experience and capability in the similar environment slow. The maturity of organization in terms of capability is also low. Calculate the project point count, new object points and effort to develop such a project. 10 Marks
- (b) Discuss Software Requirement specifications. 10 Marks
- Q.2 (a) Explain RAD model and Spiral model with advantages and disadvantages. 8Marks
- (b) What is meant by software reliability? Explain any two reliability growth model.
- Q.3 (a) Explain Fact Finding Technique. 8 marks
- (b) Explain Mc Call's software quality model in detail. 7 Marks
- Q.4 (a) Consider a software project with 8 tasks T1-T8. Duration of 8 tasks in weeks are 10, 25, 15, 10, 15, 8, 15, 10 respectively. T2 and T3 can start when T1 is complete. T4 can start when T2 and T3 are complete. T5 and T6 can start when T4 is complete. T7 can start when T5 and T6 are complete. T8 can start when T7 is complete. Assuming above description answer the following questions. 8 Marks
- a) What is the latest start time for T6?
- b) What is the slack time for T2 and T3?
- c) Which tasks are on critical path?
- (b) Explain in brief the relation between People and Effort. 7 Marks
- Q.5 (a) Consider a project with the following functional units:  
Number of User inputs = 30  
Number of User outputs = 42  
Number of User enquiries = 08  
Number of User files = 07  
Number of External Interfaces = 06  
Assume that all complexity adjustment values are moderate. Compute the function points for the project. 8 marks
- (b) Short Notes on cost benefits analysis. 7 Marks
- Q.6 (a) What is software maintenance cost? Explain types of Maintenance. 8 Marks
- (b) Explain how Formal technical review is conducted. Explain how FTR helps in software quality assurance. 7Marks
- Q.7 Write a short notes on: (Any Three) 15 Marks
- a) Structured Analysis
- b) HIPO chart
- c) Warnier orr Diagram
- d) Degree of Rigor

Course: M.C.A.(CBSGS) SEM - I (Prog-T8621)

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Correction:

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Q.5a)

***Assume the weighting factors for all functional units as average.***

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## SOFTWARE ENGG

Q.P. Code : 513900

(3 Hours)

Total Marks : 80

**Note :**(1) Question No. 1 is Compulsory.(2) Attempt any **FOUR** question from 2 to 7

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|--------|---|----|
| 1. (A) | Explain any five fact finding techniques in detail?   | 10 |
| (B)    | Explain RAD model and its advantages  | 10 |
| 2. (A) | Explain Formal Technical Review in detail.  | 8  |
| (B)    | Explain Mc Call's software quality model in detail.   | 7  |
| 3. (A) | Explain SDLC model in detail.   | 8  |
| (B)    | Explain various team structures in software engineering.  | 7  |
| 4. (A) | Discuss Software Requirement Specification (SRS).   | 8  |
| (B)    | Explain different types of Software Maintenance in detail.  | 7  |
| 5. (A) | An application has the following:<br>10 low external inputs,<br>12 high external outputs<br>20 low internal logical files,<br>15 high external interface files,<br>12 average external inquiries.<br>And a value of complexity adjustment factor of 1.10<br>What are the unadjusted and adjusted function point counts? | 8  |
| (B)    | Explain in detail Structured walkthroughs.  | 7  |
| 6. (A) | A project is estimated to be 400 KLOC. Calculate the effort and development time for each of the three modes. Given: organic (a1=2.4,a2=1.05,b1=2.5,b2=0.38), semidetached (a1=3.0,a2=1.12,b1=2.5 ,b2=0 .35), Embedded {a 1=3 .6,a2=1.20 ,b 1=2.5, b2=0.32)   | 8  |
| (B)    | Explain Software Reliability metrics in detail  | 7  |
| 7.     | Write short notes on : (any three, 5 marks each)  | 15 |
|        | a. Waterfall model  |    |
|        | b. HIPO chart   |    |
|        | c. Data Flow Diagram  |    |
|        | d. CASE tools   |    |