(Please write your Exam Roll No.) Exam Roll No. .....

END TERM EXAMINATION

FOURTH SEMESTER [BCA] MAY 2018

Paper Code: BCA-208 **Subject: Software Engineering**

Time: 3 Hours **Maximum Marks: 75**

Note: Attempt five questions in all including Q.no.1 which is compulsory. Select one question from each unit.

Q1 Answer the following questions briefly: **(2.5x10=25)**

(a) What is software crisis? Was Y2K a software crisis.
(b) Distinguish between generic and customized software product. Which one has larger share of market and why?
(c) What are the characteristics of a good SRS?
(d) Describe any two software size estimation techniques.
(e) Define module cohesion and list down various types of cohesion.
(f) What are the various categories of software metric?
(g) What are the crucial process steps of requirement engineering? Discuss with the help of a suitable diagram.
(h) What are the different levels of testing?
(i) What are the various categories of software maintenance?
(j) What do you mean by Regression testing?

Unit-I

Q2 (a) Explain the spiral model of software development with the help of a diagram. What are the limitations of such a model? **(5)**

(b) Consider the problem of University Result Management System and design the following: **(7.5)**
(i) Use Case Diagram
(ii) Level-1 DFD
(iii) ER Diagram

Q3 (a) What is facilitated application specification technique (FAST) and compare this with brainstorming sessions. **(2.5)**

(b) List out the merits and demerits of various SDLS models. **(10)**

Unit-II

Q4 (a) What are the risk management activities? Is it possible to prioritize the risk? **(5)**

(b) Compare the Walston-Felix model with the SEL model on a software development expected to involve 8 person-years of effort. **(7.5)**
(i) Calculate the number of lines of source code that can be produced.
(ii) Calculate the duration of the development.
(iii) Calculate the productivity in LOC/PY.
(iv) Calculate average manning.

Q5 (a) Describe the role of management in software development with the help of examples. **(5)**

(b) Suppose that a project was estimated to be 600 KLOC. Calculate the effort, development time, average staff size and productivity for each of the three modes i.e. organic, semidetached and embedded. **(7.5)**

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BCA-208
P1/2

Project	a_b	b_b	c_b	d_b
Organic	2.4	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

Unit-III

Q6 (a) Describe the various strategies of design. Which design is most popular and practical? **(6)**

(b) For a program with the number of unique operators $n_1 = 40$ and number of unique operands $n_2 = 60$, compare the followings: **(6.5)**

(i) Program Volume
(ii) Potential Volume
(iii) Program level
(iv) Program Difficulty
(v) Effort
(vi) Time

Q7 (a) Write a short note on the following terms: **(6)**

(i) Liver variables
(ii) Module weakness

(b) Describe the following terms: **(6.5)**

(i) Objects
(ii) Messages
(iii) Abstraction
(iv) Class
(v) Inheritance
(vi) Polymorphism

Unit-IV

Q8 (a) Discuss the structural testing. How is it different from functional testing? **(6)**

(b) Write a short note on the maintenance process with a suitable diagram. **(6.5)**

Q9 (a) Briefly discuss the following: **(6.5)**

(i) Test case design and test suite
(ii) Verification and Validation
(iii) Alpha, Beta and Acceptance testing

(b) Write short note on the following: **(6)**

(i) Re-engineering
(ii) Reverse Engineering

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BCA-208
P2/2