Exam Roll No. .....

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# END TERM EXAMINATION

FOURTH SEMESTER [BCA] MAY- JUNE 2019

**Paper Code: BCA-208** **Subject: Software Engineering (Batch 2011 onwards)**

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

**Note: Attempt any five questions including Q.1 which is compulsory. Select one question from each unit.**

Q1 Answer all of the following question: **(2.5x10=-25)**

(a) What is debugging and why is it so hard?
(b) Define Data Structure Metrics.
(c) Differentiate between structural and functional testing.
(d) Discuss Feasibility Study and its significance.
(e) What are requirement elicitation techniques? Discuss any one technique in brief.
(f) Differentiate between Software Reverse Engineering and Software Re-Engineering.
(g) What is context diagram? How is it different from Level 1 DFD?
(h) Discuss cyclomatic complexity and its significance.
(i) Discuss various factors of software management dependency.
(j) Discuss various size estimation metrics and their significance.

## UNIT-I

Q2 (a) Discuss the organization of good SRS along with its characteristics. **(6)**
(b) Discuss Prototype Model in detail. What are its various issues How is it different from Evolutionary Model. **(6.5)**

Q3 (a) What is the Software Development Life cycle? List various SDLC models. **(6)**
(b) Draw and label and well described Use Case diagram and level 1 DFD for hotel management system. Make assumptions as required. **(6.5)**

## UNIT-II

Q4 (a) Discuss COCOMO Model in detail. **(8.5)**
(b) An application has the 10 low external inputs, 12 high external outputs, 20 low internal logical files, 15 high external interface files, 12 averages external inquires, and a value of complexity adjustment factor of 1.10. What are the unadjusted and adjusted function point counts? **(4)**

Q5 (a) Using the Watson-Felix model on a software development expected to involving 8 person-years of effort. **(6)**
(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 the average manning
(b) What is Risk? What are various Risk Management Activities? **(6.5)**

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## UNIT-III

Q6 (a) Describe the key features of Object Oriented based software. **(6.5)**
(b) Write a program to find the maximum of three numbers. Find Halstead token count metrics for this program. **(6)**

Q7 Discuss the following:- **(4+4+4.5)**
(a) Module Coupling and its types
(b) Module Cohesion and its types.
(c) Object Oriented Designing

## UNIT-IV

Q8 (a) Write short notes on following **(any two):-** **(8)**
1. DD-Path Testing
2. Boundary Value Analysis
3. Cause Effect Graph Testing

(b) Generate all the independent paths required for testing program that finds all even numbers between 1-50. **(4.5)**

**Q9** **(a)** What is software maintenance? Discuss its various categories and issue during maintenance. **(4.5)**
**(b)** Explain Taute's maintenance model with the help of a diagram. **(4)**
(c) Discuss Configuration Management in software development. **(4)**

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