BRAINWARE UNIVERSITY

Term End Examination 2018 - 19

Programme – B.Sc.(CS)

Course Name - Software Engineering

Course Code - BCS602

(Semester – 6)

Time allotted: 3 Hours **Full Marks : 70**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group –A

(Multiple Choice Type Question) 10 x 1 = 10

1. *Choose the correct alternative from the following*

(i) What is the goal of the requirement analysis and specification phase of SDLC?

a. Understanding the customer requirements and organize them in a informal document.

b. Analyzing the cost of the development.

c. Determining the scope of the software.

d. None of these.

(ii) Risk analysis of a project is done in

a. Analysis phase

b. Implementation phase

c. Feasibility Study

d. Maintenance phase

(iii) In which step of SDLC project termination could be done?

a. Design phase

b. Maintenance phase

c. Coding phase

d. Feasibility study phase

(iv) Test cases are designed during:

a. Test recording
b. Test planning
c. Test configuration
d. Test specification

(v) At the highest level, a DFD is referred to as

a. HIPO
b. Context diagram
c. Level 1
d. Level 2

(vi) Which of the following is not a type of incremental testing approach?

a. Big-bang
b. Top down
c. Bottom up
d. none of these

(vii) Testing of software actual data and in actual environment

a. Alpha Testing
b. Beta Testing
c. Regression Testing
d. None of these

(viii) Black box testing is also known as ……...

a. glass box
b. functional testing
c. structural testing
d. none of the above

(ix) Which type of the maintenance deals with the problem arise during use of the software?

a. corrective
b. adaptive
c. preventive
d. none of these

(x) Alpha testing done at ……...

a. Developer's site
b. Client's site
c. both a and b
d. none of these

Group – B

(Short Answer Type Questions) 3 x 5 = 15

Answer any *three* from the following

2. What is Software Crisis? Explain the reason behind software crisis. [2+3]
3. What is software engineering? Differentiate between program and software. [2+3]
4. Explain the term 'SDLC'. Why it is required in software industry? [3+2]
5. Describe different reliability metrics:ROCOF, MTTF,MTTR,MTBF,POFOD [5]
6. There are 120 errors estimated to be present in a program. We have experienced 80 errors. Use Jelinski Moranda model to calculate failure intensity with a given value of $\Phi = 0.03$. What will be failure intensity after the experience of 100 errors? [5]

Group – C

(Long Answer Type Questions) 3 x 15 = 45

Answer any *three* from the following

7. (a) What is SRS? [1]
   (b) Briefly explain the difference between classical waterfall and iterative waterfall model. [3]
   (c) Explain the Spiral Model with its advantages and disadvantages. [5+3+3]

8. (a) Compute the function point value for a project with the following information domain characteristics: [7]

Number of inputs: 45
Number of outputs: 67
Number of user inquiries: 24
Number of files: 10
Number of external interface: 05
Assume that all complexity adjustment values are complex.

(b) Explain the difference between 'Measure', 'Metric' and 'Indicator'. [3]

(c) Explain the 'Team Structure' and 'Organization Structure' [5]

9. (a) What is Regression testing? [2]

(b) Draw the CFG for the function .From the CFG determine its Cyclomatic complexity(all three form) [8]

```
int compute_gcd(x,y)
int x,y;
{
 while (x != y){
 if (x>y) then
            x=x-y;
     else y=y-x;
 }
 return x;
}
```

(c) Explain the difference Verification and Validation [5]

10. (a) The following table indicates the various tasks involved in completing a software, the corresponding activities and the estimated duration for each task in days. [8]

Activity	Duration	Predecessor
T1	15	…..
T2	45	T1
T3	30	T1
T4	105	T2,T3
T5	45	T2,T3
T6	120	T4,T5
T7	60	T1

Draw the activity network diagram,find out the critical path and also estimate the minimum time to completion the project.for the project.

	(b)	Explain different types of failure.	[4]
	(c)	"Software does not wear out but hardware does"---Justify the statement.	[3]
11.	(a)	What is reverse engineering?	[2]
	(b)	Explain Belady and Lehman Model of Maintenance cost.	[5]
	(c)	Annual Change Traffic (ACT) for a software system is 15% per year. The development effort is 600 PM. Compute an estimate for Annual Maintenance Effort (AME). If lifetime of the project is 10 years, what is the total effort of the project?	[5]
	(d)	Explain different types of maintenance.	[3]
