U.G. 6th Semester Examination - 2022
COMPUTER SCIENCE
[HONOURS]
Course Code : COM.SC-H-CC-L-613
(Software Engineering)

Full Marks : 60   Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP-A

1. Answer any **ten** questions: 2×10=20

   a)   What is software quality?

   b)   When someone should use RAD model for software development?

   c)   What are the software testing tools?

   d)   What is the use of Putman Resource Allocation Model?

   e)   What is Capability Maturity Model Integration?

   f)   Why COCOMO is also known as heuristic estimation technique?

   g)   What is software validation?

   h)   Which life cycle model will you follow for developing software for a game? Justify your answer.

[Turn over]

   i)   The size of an organic type software system to be developed by ABC Consultancy Pvt. Ltd. has been estimated to be 250 KLOC. Determine the effort required to develop the software.

   j)   Differentiate between code walkthrough and code inspection.

   k)   What problems may occur if a module has low cohesion?

   l)   What are the functional requirements of a software?

   m)   What is White-Box testing?

   n)   What is risk containment?

   o)   Why spiral model is also known as meta model?

GROUP-B

Answer any **four** questions :   5×4=20

2.   Discuss the role of stubs and drivers in integration testing. What is big-bang testing?   3+2

3.   What are the attributes of software quality? How correctness differs from reliability?   3+2

4.   What are the differences between LOC and FP? What is the use of cost drivers?   3+2

5.   What is the difference between cohesion and coupling? Describe stamp coupling with suitable example.   2+3

6. Why is SRS document known as black box specification of a system? What are the parameters to be considered to make a successful SRS? 2+3

7. What are the different types of team structure followed in software projects? Discuss them briefly.

GROUP-C

Answer any **two** questions : 10×2=20

8. a) State the differences between waterfall model and iterative waterfall model.

   b) Explain different types of feasibility study.

   c) What are different categories of users of the SRS document ? What are their expectations from SRS?

   3+3+(2+2)

9. a) What are the differences between fault, failure and error?

   b) What is V-Model of software testing?

   c) What is the difference between equivalence class partitioning and boundary value analysis?

   3+3+4

10. a) What is cyclomatic complexity?

    b) For the given code, draw the Control Flow Graph and calculate the cyclomatic complexity:

```
int getMax(int n1, int n2, int n3){
    int max;
    if(n1>n2)
        if(n1 >n3)
            max=n1;
        else
            max = n3;
    else
        if(n2>n3)
            max = n2;
        else
            max = n3;
    return max;
}
```

    c) Design a White Box Test suite for the following code:

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

    2+4+4

11. Write short notes on any **two** of the following:

    5×2=10

    a) Software engineering as a layered technology

    b) Structure Chart

    c) Data Flow Diagram (DFD)

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