U.G. 6th Semester Examination - 2021
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 requirements specification?

   b)   What is prototyping?

   c)   Why should time and resources be spent on developing an SRS Document?

   d)   What is risk refinement?

   e)   What is the difference between black box and white box testing?

   f)   How is the software requirements specification (SRS) document validated?

   g)   What is software failure?

   h)   When is the difference between a flow chart and a structure chart?

   i)   What are the various kinds of testing?

   j)   What is software quality management?

   k)   What are user interface requirements?

   l)   "Stub is useful during unit testing"- Justify the statement.

   m)   Explain stamp coupling with suitable example.

   n)   Distinguish between software validation and verification.

   o)   How project risk is handled using spiral model?

GROUP-B

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

2.   Write five major responsibilities of a software project manager.   5

3.   What is meant by a code walkthrough? What are some of the important types of errors checked during code walkthrough? Give one example of each of these types of errors.   1+2+2

4.   What are the advantages and disadvantages of the spiral model?   5

5. What is the difference between the functional and the non-functional requirements of a system? Identify at least two functional requirements of a bank automated teller machine (ATM) system. Also identify one nonfunctional requirement for an ATM system.

2+2+1

6. What is RMMM plan? Explain briefly. 1+4

7. What are the shortcomings of reliability metrics of software products? 5

GROUP-C

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

8. a) What is meant by the 'size' of a software project? Why does a project manager need to estimate the size of the project? How is the size estimated?

b) What do you understand by product visibility in the context of software development? Why is it important to improve product visibility during software development? How can product visibility be improved? (2+2+1)+(2+2+1)

9. a) Discuss the relative advantages of formal and informal requirements specifications.

b) What is control flow graph?

c) Draw the control flow graph of the following code for gcd computation and also find the Mccabe's number from the graph.

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

5+1+4

10. a) Distinguish between an error and a failure in the context of program testing. Which of these two is detected by testing? Justify your answer.

b) What do you understand by positive and negative test cases? Give one example of each.

(3+2+1)+(2+2)

11. Write short notes on any **two** of the following: 5×2=10

a) Black-Box testing

b) Project scheduling

c) Software Quality Assurance

_____