

Bachelor of Engineering Information Technology Exam, 2018

2nd Year, 2nd Semester

Software Engineering

Marks-100

Time- 3 Hours

Different parts of the same questions should be answered together.

CO1-10

1. Answer any one question.
- a) i) Give a comparative study among the different models like waterfall, prototype, spiral and RAD model. 5
ii) What is meant by Booch Model? 2
iii) Write a short note on vanilla framework. 3
- b) i) Explain the Lehman's Laws of software evolution. 5
ii) List out the principles and myths of software engineering 5

CO2-20

2. a) List out the principles of system analysis. 2
b) Describe with a diagram, the working of analysis phase. 5
c) Explain the different features of SRS. 5

P.T.O

d) Differentiate between: -

2+3=5

i) DFD and ERD

ii) SA/SD and OOAD

e) Draw a state diagram for a fixed-size stack.

3

CO3-20

3. Answer any two questions.

a) i) Develop a model for software design.

4

ii) Determine the importance of KE in SE: design.

4

iii) Mention the different phases of RUP.

2

b) i) Determine the logical validity of design for the given below.

3

```
z=0
```

```
while x>0
```

```
z=z+y;
```

```
x=x-1;
```

```
end while;
```

```
print (z);
```

ii) Differentiate between: (any 1) -

3

I) cohesion and coupling

II) design pattern and framework

P.T.O

5
iii) Write short note: (any 1) -

4

I) sharktooth model

II) Seeheim Model

c) Describe the classification of cohesion and coupling in software design.

10

C04-10

4. Answer any one question.

a) i) Discuss the various steps of STLC.

5

ii) Differentiate between: -

3+2=5

A. white box and black box testing

B. testing and debugging

b) i) List out the principles of software testing.

3

ii) Write a short note on test oracle.

3

iii) What do you mean by confidence in software?

2

iv) Define: waterwheel model.

2

P.T.O

d)

i

5. Answer any two questions.

a) i) A software project has the different phases with corresponding documents: planning = 3500 LOC, analysis = 3700 LOC, design = 5100 LOC, coding = 1400 LOC, testing = 3550 LOC, maintenance = 1400 LOC and assessment = 1400 LOC.

The various attributes of the s/w are specified: completeness = 0.75, capability = 3.25, reliability = 0.65, efficiency = 75% and reusability = 80%.

The avg. development cost is Rs. 8000/- per KLOC/PM. The code is written in C language. Apply COCOMO for the given project.

Determine its equivalent FP measurement. What is the EVI of this project?

ii) Evaluate the PERT-CPM for the given below.

activity	task (days)		
	opt.	most likely	pesmt.
1->2	4	6	7
1->3	1	2	5
1->4	4	5	6
1->5	3	6	8
2->3	5	6	7
2->4	3	4	5
2->5	1	3	4
3->4	1	5	6
3->5	1	3	5

b) i) Determine the linguistic metrics for the given code segment.

8

```
read x , y , z ;  
type= "scalene";  
if(x==y or x==z or y==z)  
type="isosceles";  
if(x==y and x==z)  
type="equilateral";  
if(x>=y+z or y>=x+z or z>=x+y)  
type="not a triangle";  
if(x<=0 or y<=0 or z<=0)  
type="invalid inputs";  
print type.
```

ii) List out the guidelines of coding.

3

iii) Define: Fog Index.

2

iv) What are the Cardeli's 5 criteria to address the fitness of R-T PL?

3

v) Define: Royce's principles of SPM.

4

c) i) Describe the working of staged CMMI Model.

5

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ii) List out the guidelines of coding. 3

iii) Define: Fog Index. 2

iv) What are the Cardeli's 5 criteria to address the fitness of R-T PL? 3

v) Define: Royce's principles of SPM. 4

c) i) Describe the working of staged CMMI Model. 5

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LOC.

12

8

P.T.O

P.T.O

ii) Differentiate between: -

2+3=5

- A. model and standard
- B. review and inspection

iii) Write short note on: (any 2) -

5+5=10

- A. CASE Tools
- B. Software Engineering Notebook
- C. simulation and prototyping
- D. the project Crocodile

7
5