UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2020

Course: Software Engineering and Project Management   Semester: IV
Course Code: CSEG2008   Time:2-4 PM
Programme: B.Tech-CSE-IFM   Max. Marks:100
Instructions:

UPES

Edit Mode is: **ON**   **?**

This Test has 18 attempts. For information on editing questions, click **More Help** below.   X

Test Canvas: SEPM END SEM JULY 2020

The Test Canvas lets you add, edit and reorder questions, as well as review a test. *More Help*

Question Settings

You can edit, delete or change the point values of test questions on this page. If necessary, test attempts will be regraded after you submit your changes.

Description	
Instructions	
Total Questions	60
Total Points	60
Number of Attempts	18

Select: All None   Select by Type: [- Question Type - ▾]

Delete and Regrade | Points [   ]   Update and Regrade | Hide Question Details

☐ **1. Multiple Choice: A company needs to develop digital si...**   Points: **1**

Question	A company needs to develop digital signal processing software for one of its newest inventions. The software is expected to have 40000 lines of code. The company needs to determine the effort in person-months needed to develop this software using the basic COCOMO model. The multiplicative factor for this model is given as 2.8 for the software development on embedded systems, while the exponentiation factor is given as 1.20. What is the estimated effort in person-months?
Answer	✅ 234.25
	932.25
	287.5
	112.4

☐ **2. Multiple Choice: External entities should be identifie...**   Points: **1**

Question	

External entities should be identified clearly at all levels of DFDs.

Answer	TRUE
	✅ FALSE

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3. Multiple Choice: Control information should not be rep...

Points: **1**

Question	Control information should not be represented in a DFD.
Answer	✅ TRUE
	FALSE

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4. Multiple Choice: The context diagram should depict the...

Points: **1**

Question	The context diagram should depict the system as a single bubble.
Answer	✅ TRUE
	FALSE

---

5. Multiple Choice: The cyclomatic complexity of a module...

Points: **1**

Question	The cyclomatic complexity of a module is equal to the maximum number of linearly independent circuits in the graph.
Answer	TRUE
	✅ FALSE

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6. Multiple Choice: The cyclomatic complexity can also be...

Points: **1**

Question	The cyclomatic complexity can also be used as a number of linearly independent paths that should be tested during path coverage testing.
Answer	✅ TRUE
	FALSE

---

7. Multiple Choice: Inflexible partitioning of the projec...

Points: **1**

Question	Inflexible partitioning of the project into stages
Answer	Spiral Model
	Prototype Model
	✅ Waterfall Model
	RAID Model

☐ 8. Multiple Choice: The prototyping model is a method of ...

Question	The prototyping model is a method of requirements validation.
Answer	✅ TRUE
	FALSE

☐ 9. Multiple Choice: The requirements document also descri...

Question	The requirements document also describes how the requirements that are listed in the document are implemented efficiently.
Answer	TRUE
	✅ FALSE

☐ 10. Multiple Choice: Consistency and completeness of funct...

Question	Consistency and completeness of functional requirements are always achieved in practice.
Answer	TRUE
	✅ FALSE

☐ 11. Multiple Choice: Requirements review is carried out to...

Question	Requirements review is carried out to find the errors in system design
Answer	TRUE
	✅ FALSE

12. Multiple Choice: "In the context of modular software d...

Points: **1**

Question	"In the context of modular software design, which one of the following combinations is desirable?"
Answer	✅ High cohesion and low coupling
	High cohesion and high coupling
	Low cohesion and high coupling
	Low cohesion and low coupling

13. Multiple Choice: Equivalence class partitioning is inc...

Points: **1**

Question	Equivalence class partitioning is included in
Answer	White-box testing
	✅ Black-box testing
	System testing
	All of the above

14. Multiple Choice: Condition coverage is included in&nbs...

Points: **1**

Question	Condition coverage is included in
Answer	✅ White-box testing
	Black-box testing
	System testing
	Alpha Testing

15. Multiple Choice: We can draw CFG for any program //...**

Points: **1**

Question	We can draw CFG for any program
Answer	✅ TRUE

FALSE

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16. **Multiple Choice: Any node and edge sequence from the s...**   Points: **1**

Question	Any node and edge sequence from the start node to a terminal node of the control flow graph of a program is called
Answer	Linearly Independent Path
	✅ Path
	Walk
	Control Flow Graph

---

17. **Multiple Choice: "In the presence of loops, the number...**   Points: **1**

Question	"In the presence of loops, the number of paths can become extremely large in c CFG"
Answer	✅ TRUE
	FALSE

---

18. **Multiple Choice: "McCabe's cyclomatic complexity metri...**   Points: **1**

Question	"McCabe's cyclomatic complexity metric defines lower bound of "Linearly Independent Path"
Answer	TRUE
	✅ FALSE

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19. **Multiple Choice: Testing conducted at the developer's ...**   Points: **1**

Question	Testing conducted at the developer's site by some potential customers is called
Answer	✅ Alpha Testing
	Beta Testing
	Acceptance Testing

None of the above

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20. **Multiple Choice: The user system requirements are the ...**

Points: **1**

Question	The user system requirements are the parts of which document?
Answer	SDD
	✅ SRS
	DDD
	SRD

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21. **Multiple Choice: Which is one of the most import...**

Points: **1**

Question	Which is one of the most important stakeholder from the following?
Answer	Entry level personnel
	Middle level stakeholder
	Managers
	✅ Users of the software

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22. **Multiple Choice: What is the first step of requirement...**

Points: **1**

Question	What is the first step of requirement elicitation ?
Answer	✅ Identifying Stakeholder
	Listing out Requirements
	Requirements Gathering
	All of the mentioned

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23. **Multiple Choice: What are the types of requireme...**

Points: **1**

Question	What are the types of requirements in Quality Function Deployment(QFD)?

Answer	"Known, Unknown, Undreamed"
	"User, Developer"
	"Functional, Non-Functional"
	✅ " Normal, Expected, Exciting"

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24. Multiple Choice: Which of the following property does ...

Points: **1**

Question	Which of the following property does not correspond to a good Software Requirements Specification (SRS) ?
Answer	Verifiable
	✅ Ambiguous
	Complete
	Traceable

---

25. Multiple Choice: Which of the following property of SR...

Points: **1**

Question	Which of the following property of SRS is depicted by the statement: Conformity to a standard is maintained?
Answer	Correct
	✅ Complete
	Consistent
	Modifiable

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26. Multiple Choice: " Consider a system where a heat sens...

Points: **1**

Question	" Consider a system where a heat sensor detects an intrusion and alerts the security company. What kind of a requirement the system is providing?"
Answer	✅ Functional
	Non-Functional

Known Requirement

None of the mentioned

27. **Multiple Choice: Which of the following statements abo...**

Question	Which of the following statements about SRS is/are true?
	I SRS is written by the customer
	II SRS is written by a developer
	III SRS serves as a contract between customer and developer

Answer	Only I is true
	Both II and III are true
	✅ All are true
	None of the mentioned

28. **Multiple Choice: The SRS document is also known as____...**

Question	The SRS document is also known as_____specification.
Answer	✅ black-box
	white-box
	grey-box
	none of the mentioned

29. **Multiple Choice: What kind of approach was introduced ...**

Question	What kind of approach was introduced for elicitation and modelling to give a functional view of the system?
Answer	Object Oriented Design (by Booch)
	✅ Use Cases (by Jacobson)
	Fusion (by Coleman)

Object Modeling Technique (by Rumbaugh)

Points: **1**

☐ **30. Multiple Choice: Why is Requirements Elicitation a dif...**

Question	Why is Requirements Elicitation a difficult task?
Answer	Problem of scope
	Problem of understanding
	Problem of volatility
	✅ All of the mentioned

Points: **1**

☐ **31. Multiple Choice: In dataflow diagram process is repres...**

Question	In dataflow diagram process is represented by a _____
Answer	✅ circle
	rectangle
	triangle
	parallelogram

Points: **1**

☐ **32. Multiple Choice: A Data Flow Diagram (DFD) is composed...**

Question	A Data Flow Diagram (DFD) is composed of which elements?
Answer	Data sources and destinations
	Data flows
	Transformation processes
	✅ All of the above

Points: **1**

☐ **33. Multiple Choice: Many documentation tools are availabl...**

Question	

Many documentation tools are available to explain how a system works. Which tool provides a graphical description of the sources and destinations of data as well as data flow within the organization and the processes that transform and store that data?

Answer	
	Data flow diagram
	Document flowchart
✅	Program flowchart
	System flowchart

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34. Multiple Choice: Which of the following is not a guide...

Question	Which of the following is not a guideline for drawing a Data Flow Diagram (DFD)?
Answer	Develop a context diagram
	Subdivide the DFD
	Determine system boundaries
✅	Display the physical location of data files

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35. Multiple Choice: "A project has cashflows of -100000...

Question	"A project has cashflows of -100000, 10000, 10000, 10000, 20000, 100000 (all in dollars) for year 0, 1, 2, 3, 4 and 5 respectively. The Payback period is estimated as_____years"
Answer	3.5
	4.25
	4.8
✅	4.5

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36. Multiple Choice: "A project has cashflows of -100000...

Question	"A project has cashflows of -100000, 10000, 10000, 10000, 20000, 100000 (all in dollars) for year 0, 1, 2, 3, 4 and 5 respectively. The ROI for the project is_____percent"
Answer	9.5
✅	10
	10.5
	11.5

37. Multiple Choice: The average staff size for a 200 KLOC...

Points: **1**

Question	The average staff size for a 200 KLOC project using COCOMO Model is____persons
Answer	✓ 38.67
	36.63
	35.33
	30.88

38. Multiple Choice: The effort for a project of size 500 ...

Points: **1**

Question	The effort for a project of size 500 KLOC using COCOMO Model is_____PM
Answer	6328
	6350
	6268
	✓ 6238

39. Multiple Choice: "A program has 5 EIs of simple type, ...

Points: **1**

Question	"A program has 5 EIs of simple type, 4 EOs of average type, 4 EQs of complex type, 3 ILFs of average type and 4 EIFs of complex type. The complexity adjustment factors are to be taken as average. The FP for this program is_____"
Answer	128
	131
	✓ 138
	145

40. Multiple Choice: "A program has 5 EIs of simple type, ...

Points: **1**

Question	"A program has 5 EIs of simple type, 4 EOs of average type, 4 EQs of complex type, 3 ILFs of average type and 4 EIFs of complex type. The complexity adjustment factors are to be taken as average. The UFP for this program is_____"
Answer	125
	129

121

119

41. Multiple Choice: "A system has 15 user inputs (Average...

Question	"A system has 15 user inputs (Average), 10 user outputs (High), 5 user inquiries (High), 8 internal logical files (Low) and 4 external interface (High). The UFP Count is_____"
Answer	236
	248
	244
	✅ 256

42. Multiple Choice: "Assume that the size of an organic t...

Question	"Assume that the size of an organic type software product has been estimated to be 32,000 lines of source code. Assume that the average salary of software engineers be Rs. 15,000/- per month. Determine the effort required to develop the software product and the nominal development time.From the basic COCOMO estimation formula for organic software:From the basic COCOMO estimation formula for organic software: Nominal Development Time is"
Answer	✅ 14 months
	12 months
	15 months
	19 months

43. Multiple Choice: "A company wants to start a Project a...

Question	"A company wants to start a Project and to calculate its feasibility,There is another method which states that there is some models which are often based on equation (i), they actually depend on several variables representing various aspects of the software development environment, for example method used, user participation, customer oriented changes, memory constraints, etc.Company deduced that the project they are using is of size 500 KLOC, Based on the data given what will be the duration of the project"
Answer	67.1234
	89.5678
	651.8901
	✅ 38.4072

44. Multiple Choice: "A project has expenditure of 180 lac...

Question	"A project has expenditure of 180 lacs and the revenues at the end of each year are 64, 80, 100, 125 and 105 lacs. The ROI for the project is_____percent"
Answer	✅ 32.67
	35.67
	25.67
	33.33

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45. Multiple Choice: "A project has expenditure of 180 lac...

Question	"A project has expenditure of 180 lacs and the revenues at the end of each year are 64, 80, 100, 125 and 105 lacs. The NPV assuming 12.5 percent discount rate is_____lacs"
Answer	141.89
	143.37
	✅ 146.63
	151.89

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46. Multiple Choice: The value of a and b in E=a(KLOC)^b f...

Question	The value of a and b in E=a(KLOC)^b for basic COCOMO (Organic) having 2-50 KLOC is
Answer	✅ "a=2.4,b=1.05"
	"a=3.0,b=1.12"
	"a=2.4,b=1..12"
	"a=3.0,b=1.05"

---

47. Multiple Choice: The value of a and b in E=a(KLOC)^b f...

Question	The value of a and b in E=a(KLOC)^b for basic COCOMO (Embedded) having 400 KLOC is
Answer	"a=2.4,b=1.05"
	"a=3.0,b=1.12"
	"a=2.4,b=1.12"
	✅ "a=3.6,b=1.20"

48. Multiple Choice: A project having 200 KLOC will requir...

Points: **1**

Question	A project having 200 KLOC will require Effort_____using basic COCOMO
Answer	✅ 626 PM
	1133 PM
	2077 PM
	none of given

49. Multiple Choice: A project having 200 KLOC will requir...

Points: **1**

Question	A project having 200 KLOC will require Duration of_____using basic COCOMO
Answer	✅ 29 months
	28 months
	26 months
	24months

50. Multiple Choice: Which model is popular for developmen...

Points: **1**

Question	Which model is popular for development of the user interface part of projects?
Answer	Classical Waterfall Model
	✅ Prototyping Model
	RAD Model
	Spiral Model

51. Multiple Choice: The most complex model is // docu...**

Points: **1**

Question	The most complex model is
Answer	RAD Model

Prototyping Model

✓ Spiral Mdel

None

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52. Multiple Choice:_____is a measure of the degree of...

Points: **1**

Question	_____is a measure of the degree of interdependence between modules.
Answer	Cohesion
	✓ Coupling
	Both of the above
	None of the above

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53. Multiple Choice: " If all tasks must be executed in th...

Points: **1**

Question	" If all tasks must be executed in the same time-span, what type of cohesion is being exhibited?"
Answer	Functional Cohesion
	Sequential Cohesion
	✓ Temporal Cohesion
	Control Cohesion

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54. Multiple Choice: McCall's Quality Factors

Points: **1**

Question	McCall's Quality Factors
Answer	Prodtuct Revision
	Product Transition
	Product Operation
	✓ All of the above

55. Multiple Choice: Capability Maturity Model includes /...

Question	Capability Maturity Model includes
Answer	4 levels
	✅ 5 levels
	6 levels
	3 levels

56. Multiple Choice: Context Diagram is // document.on...**

Question	Context Diagram is
Answer	✅ Level 0 DFD
	Level 1 DFD
	Level 2 DFD
	Level 3

57. Multiple Choice: If two module communicate using a com...

Question	If two module communicate using a composite data item then it is called
Answer	Data coupling
	Communication coupling
	Common coupling
	✅ Stamp coupling

58. Multiple Answer: The following ...

Question	

The following program is to be tested for statement coverage:
begin
 if (a== b) {S1; exit;}
  else if (c== d) {S2;}
      else {S3; exit;}
  S4;
end
The test cases T1, T2, T3 and T4 given below are expressed in terms of the properties satisfied by the values of variables a, b, c and d. The exact values are not given. T1 : a, b, c and d are all equal; T2 : a, b, c and d are all distinct; T3 : a = b and c != d; T4 : a != b and c = d. Which of the test suites given below ensures coverage of statements S1, S2, S3 and S4?

Answer

T1, T2, T3

T2, T4

T3, T4

✅ T1, T2, T4

☐ **59. Multiple Answer: The coupling b...**

Points: **1**

Question

The coupling between different modules of a software is categorized as follows:
   I.   Content coupling
   II. Common coupling
   III. Control coupling
   IV. Stamp coupling
   V.   Data coupling
Coupling between modules can be ranked in the order of strongest (least desirable) to weakest (most desirable) as follows:

Answer   ✅ I-II-III-IV-V

I-III-IV-V-II

V-IV-III-II-I

V-III-II-I-IV

☐ **60. Multiple Answer: while (first &...**

Points: **1**

Question

```
while (first <= last)
{
   if (array [middle] < search)
      first = middle +1;
   else if (array [middle] == search)
      found = True;
   else last = middle – 1;
   middle = (first + last)/2;
}
```
The cyclomatic complexity of the program segment is

Answer

3

✅ 4

5

6

Delete and Regrade   Points [   ]   Update and Regrade   Hide Question Details

← **OK**