Indian Institute of Information Technology, Allahabad

Department of Information Technology

C2- Exam Software Engineering **Timing: 30 Min**

Multichoice Questions:

1) _____ implies that system components can be independently developed in any programming language and, if these conform to standards, they will work with other components.

a) Transparence b) Openness c) scalability d) concurrency

2) _____ is used to map the logical resources referenced by a program onto the actual physical resources and to manage resource interactions.

a) Middleware b) System software
c) device driver d) Application software

3) _____ is particularly important when the system is dealing with time-critical data such as sound or video streams.

a) Security b) Quality of service c) scalability d) concurrency

4) Name the type of attack where system services are attacked and cannot be delivered as expected

a) Interception b) Interruption c) Modification d) Fabrication

5) Which model of interaction does not need to wait for the acknowledgment?

a) System calls b) Message c) Procedural d) Object

6) In the following **figure 1**, how many server processes can be mapped onto the physical server computers?

a) 4,2 b) 2,2 c) 3,2 d) 4,4

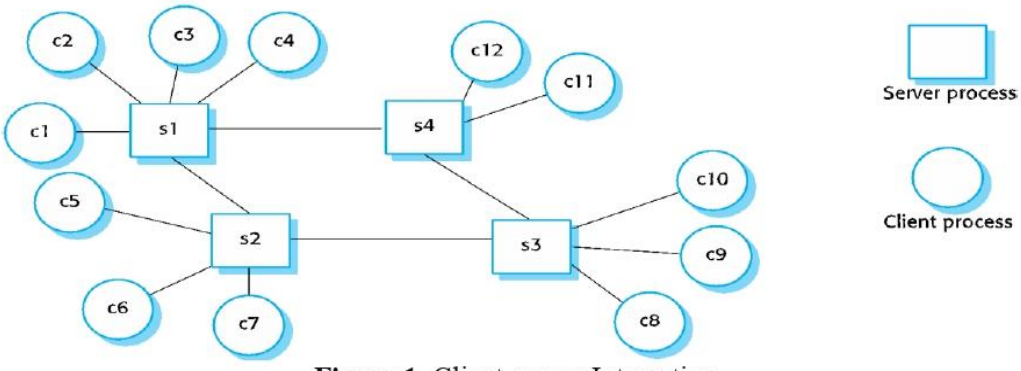

Figure 1. Client-server Interaction

7) Which layer of the client/ server system is related to web page generation?

a) Presentation b) Data handling c) Application processing d) Database

8) Which architecture is used when there is a high volume of transactions to be processed by the server?

a) Two-tier client-server architecture
b) Multi-tier client-server architecture
c) Distributed component architecture
d) Peer-to-peer architecture

9) Which client-server architectural patterns are used in the web browsing application?
   a) Two-tier client-server architecture with thin client
   b) Two-tier client-server architecture with fat clients
   c) Multi-tier client-server architecture
   d) Multi-tier client-server architecture with thin clients

10) Which client-server architectural patterns are used in the Mobile application?
   a) Two-tier client-server architecture with thin client
   b) Two-tier client-server architecture with fat clients
   c) Multi-tier client-server architecture
   d) Multi-tier client-server architecture with thin clients

11) How do you present each user of the software in terms of SaaS with the impression that they are working with their copy of the system while, at the same time, making efficient use of system resources?
   a) Configurability b) multi-tenancy c) Scalability d) Duplication

12) "A customer may be willing to allow the developer to retain ownership of the source code and reuse it in other projects" which of the following factor is related to the above statements.
   a) Contractual terms
   b) Financial health
   c) Market opportunity
   d) Requirements volatility

13) _____means that a company has some idea of the price that the customer expects to pay and makes a bid for the contract based on the customer's expected price.
   a) Cost Estimation
   b) Pricing to win
   c) Financial health
   d) Market opportunity

14) Which of the plan is not the Project plan supplement?
   a) Deployment plan
   b) Maintenance plan
   c) Quality plan
   d) Verification Plan

15) _____show the dependencies between the different events making up a project.
   a) Bar chart
   b) State Transition
   c) Activity network
   d) Gantt charts

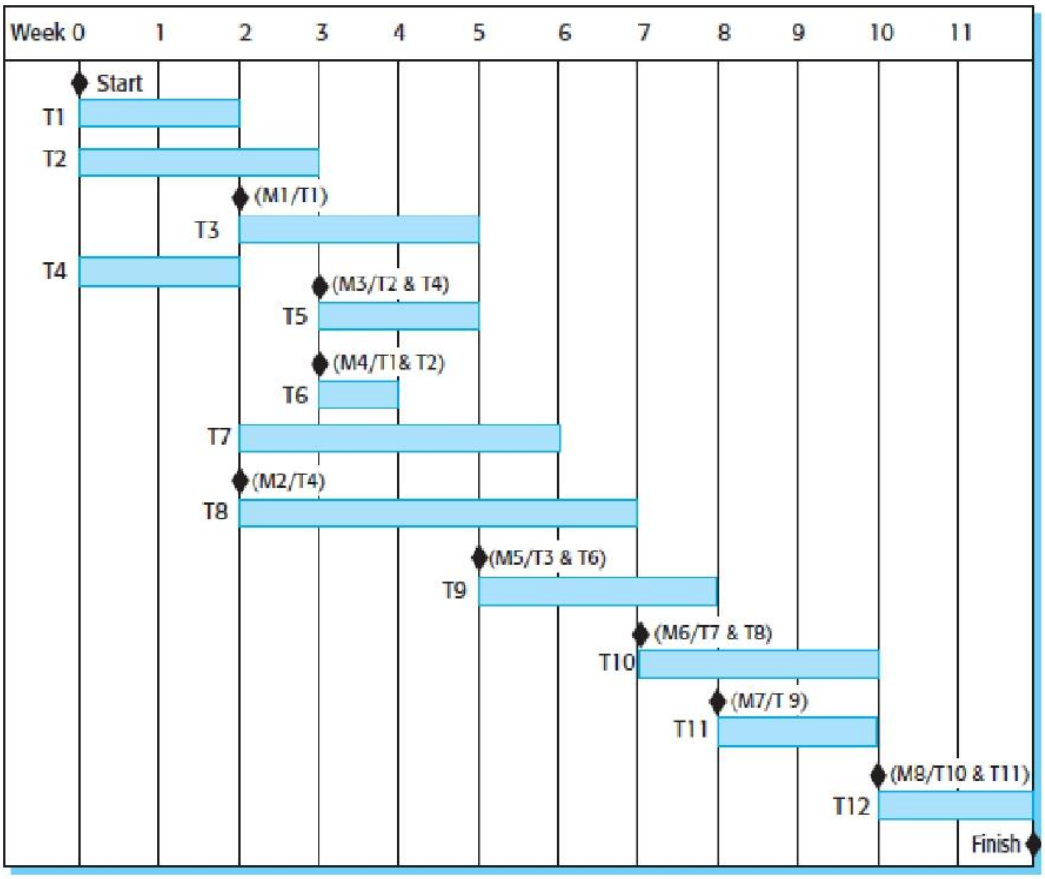

Figure 2, Activity bar chart

16) Find out the tasks which are independent and may be carried out in parallel in **figure 2,** activity bar chart?

a) T1, T2, and T3
b) T1, T2, and T5
c) T1, T2, and T4
d) T1, T2, and T6

17) Find out the task which is dependent on task T3 in the above activity bar chart?

a) T7 b) T8 c) T4 d) T9

18) Which COCOMO estimation model is used to evaluate the Effort to system design specification?

a) Application composition model
b) Early design model
c) Reuse model
d) Post-architecture model

19) If the initial estimate of the effort required is x months of effort, they found that the range may be from _____ of the actual effort as measured when the system was delivered.

a) 0.5x to 2x b) 0.25x to 2x c) 0.25x to 4x d) 0.5x to 4x

20) Based on a standard formula for algorithmic models "PM = A * Size^{B} * M where B Varies from

a) 1.1 to 1.24 b) 1.2 to 1.34 c) 1.1 to1.25 d) 1.2 to 1.24

21) What is the abbreviation for the multiplier personnel capability?

a) PERS b) PERC c) PREX d) PCA

22) What is the expansion for the multiplier RCPX?

a) Reliability and complexity of the project
b) Project reliability and complexity
c) the reuse required
d) Product reliability and complexity

23) In Reuse model -2 estimates, which formula has been used to estimate the effort

a) ESLOC = ASLOC * (AT/100) * AAM.
b) PM = (ASLOC * AT/100)/ATPROD
c) PM = (ASLOC * AT)/ATPROD
d) ESLOC = ASLOC * (1-AT/100) * AAM.

24) How many associated multipliers are used in post –architectural level of the COCOMO cost estimation model?

a) 7 b) 20 c) 17 d) 18

25) What is the approximate scale factor used in the exponent computation in the post-architecture model?

a) 1.01 b) 1.17 c) 1.00 d) 1.07

26) Arrange the following scrum practices according to the order in which they are carried out.

1. Sprint planning
2. Daily scrum meet
3. Sprint retrospective meet
4. Sprint review meet
5. Sprint

a) 1, 5, 2, 3, 4
b) 1, 5, 2, 4, 3
c) 1, 2, 5, 4, 3
d) 1, 3, 2, 4, 5

27) Which activities are a part of the Test Execution and Implementation?

1. Creating test suites from the test cases
2. Executing test cases either manually or by using test execution tools
3. Comparing actual results
4. Designing the Tests
5. Writing a test summary report

a) 1, 2, 3, 4
b) 1, 2, 3
c) 1, 2, 4
d) 1, 2, 3, 5

28) Which of the following statements are correct?

1. Stubs are used in the bottom-up approach.
2. Stubs are used in the Top-down approach.
3. Drivers are used in a bottom-up approach.
4. Drivers are used in Top-down approach.

a) 1, 3
b) 1, 4
c) 2, 3
d) 2, 4

29) Which traditional order in Software Testing is organized?

a) Integration Testing
b) System Testing
c) Unit Testing
d) Validation Testing

a) a, d, c, b
b) b, d, a, c
c) c, a, d, b
d) d, b, c, a

30) The following is the comment written for a C function

/* This function computes the roots of a quadratic equation **a.x^2 + b.x + c**. The function stores two real roots
in *root1 and *root2 and returns the status of validity
of roots. It handles four different kinds of cases.
(i) When coefficient a is zero irrespective of discriminant
(ii) When discriminant is positive
(iii) When discriminant is zero
(iv) When discriminant is negative.
Only in case (ii) and (iii) the stored roots are valid.
Otherwise, 0 is stored in roots. The function returns
0 when the roots are valid and -1 otherwise.
The function also ensures root1 >= root2
int getQuadRoots (float a, float b, float c,
float *root1, float *root2).
*/

A software test engineer is assigned the job of doing black box testing. He comes up with the following test cases, many of which are redundant. Which one of the following options provide set of non-redundant tests using equivalence class partitioning approach from input perspective for black box testing?

Test Case	Input Set			Expected Output Set		
	a	b	c	Root1	Root2	Return Value
T1	0	0	7	0	0	-1
T2	0	1	3	0	0	-1
T3	1	2	1	-1	-1	0
T4	4	-12	9	1.5	1.5	0
T5	1	-2	-3	3	-1	0
T6	1	1	4	0	0	-1

A. T1, T2, T3, T6
B. T1, T3, T4, T5
C. T2, T4, T5, T6
D. T2, T3, T4, T5