Test

Information System, Software Engineering

Time: 60 min.

Directions for questions 1 to 30: Select the correct alternative from the given choices

1. For a COCOMO model, organic projects are:
(A) Projects having small teams with good experience, working with less than rigid requirements.
(B) Projects having medium teams with mixed experience, working with more rigid requirements.
(C) Projects developed with a set of tight constraints.
(D) None of these

2. Which of the following statements is true?
(A) Basic COCOMO is good for quick estimate of software cost.
(B) COCOMO applies to three classes of software projects; organic, semi-detached and embedded.
(C) COCOMO does not account for differences in hardware constants, personal quality and experiences, etc.
(D) All the above

3. The first step in system analysis is
(A) software requirement analysis.
(B) software requirement specification.
(C) system design.
(D) information gathering.

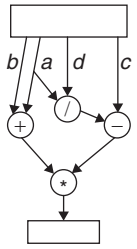
4. Questionnaire consists of
(A) qualitative data.
(B) quantitative data.
(C) Either (A) or (B)
(D) forms and documents.

5. The assessment of an intangible benefit is
(A) directly measurable.
(B) done by discussion amongst users of information system.
(C) irrelevant.
(D) done by discussion amongst the developers.

6. External entities in a DFD may be a
(A) source of input data only.
(B) destination of results only.
(C) source of input data and destination of results.
(D) data store.

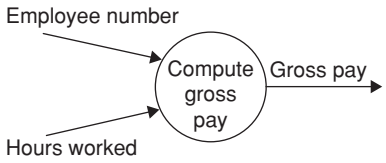
7. A context diagram
(A) is a DFD which gives an overview of the system.
(B) is a DFD that gives details of the system.
(C) is not used in DFDs.
(D) do not allow levelling of DFDs.

8. Consider the DFD below; derive an expression from the given data:



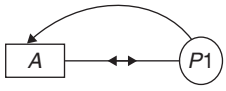
(A) $c - (a + b) * (a/d)$ (B) $a + b/d - (c * b)$
(C) $(a + b) * ((a/d) - c)$ (D) $(a + b) * (c + (a/d))$

9. Consider the following DFD:



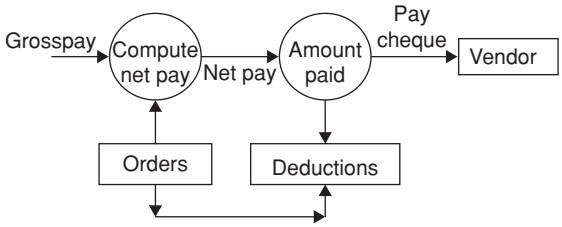
(A) It calculates the gross pay.
(B) The process is specified incorrectly.
(C) Insufficient data flow.
(D) Data flow diagrams are not used to specify these kind of computations.

10.



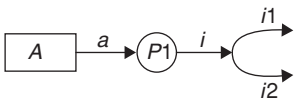
Which of the following is correct for above DFD?
(A) The given DFD is correct.
(B) A DFD cannot have arrows pointing in opposite directions.
(C) Data cannot flow from external entity to a data store.
(D) Data cannot flow from a data store to an external entity.

11. Consider the given DFD. What is the mistake in the DFD?



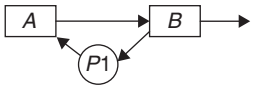
(A) A data flow cannot connect two processing steps.
(B) A data flow cannot connect two distinct data stores.
(C) Data stores cannot communicate with a process.
(D) Data flow cannot connect two distinct external entities.

12.



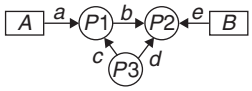
The mistake in above DFD is
(A) a data flow cannot be given two names.
(B) a data flow that has crossing lines.
(C) a DFD which forms loop.
(D) there are no mistakes in the DFD.

13.



Consider the above DFD. What is the mistake?
(A) The DFD forms a loop here.
(B) The DFD is correct.
(C) DFD does not allow communication among two external entities.
(D) DFD does not allow data flow among two data stores.

14. Consider the below DFD. What is the mistake?



(A) Process *P*2 is not designed properly.
(B) Process *P*1 is not designed properly.
(C) Process *P*3 is not designed properly.
(D) The external entities are not properly defined.

15. A good data flow diagram should have the following:
(A) A process which is a pure decision
(B) A DFD must be developed bottom up with higher levels giving more details
(C) Data flow should not act as signals to activate or initiate process
(D) All the above

16. The first phase of software development is
(A) Requirements Analysis
(B) Design
(C) Coding
(D) Testing

17. The lowest level of decomposition for a data flow diagram is
(A) primitive DFD
(B) unit DFD
(C) context DFD
(D) level 0 DFD

18. What is an important information while writing an SRS?
(A) Nature of SRS
(B) Characteristics of SRS
(C) Environment of SRS
(D) All of these

19. Which of the following is not an estimation metric for project size?
(A) LOC
(B) Function Point
(C) Feature Point
(D) None of the above

20. Human effort for developing a software project is measured in
(A) Dollars
(B) Person-Month
(C) Refects
(D) KLOC

21. Flight control software belongs to the following mode (as in basic COCOMO model):
(A) Organic mode
(B) Semi-detached mode
(C) Embedded mode
(D) None of the above

22. A transaction processing system with fixed requirements for terminal hardware and database software belongs to one of the following modes (in basic COCOMO model):
(A) Organic mode
(B) Semi-detached mode
(C) Embedded mode
(D) None of the above

23. In a software project, COCOMO is used to estimate
(A) effort and duration based on the size of the software.
(B) size, effort and duration based on the cost of the software.
(C) size and duration based on the effort of the software.
(D) effort and cost based on the duration of the software.

24. The maximum effort distribution in phases of software development is
(A) Requirement analysis
(B) Design phase
(C) Coding
(D) Testing

25. The minimum error distribution in the period of software development is in
(A) Requirement analysis
(B) Design phase
(C) Coding
(D) Testing

26. Basic Relation of COCOMO model is
(A) $E = (a * b)$*(KLOC)
(B) $E = a * (\text{KLOC}^b)$
(C) $E = a * (\text{KDL})*b$
(D) $E = a/\text{KLOC}^b$

27. The extent to which the software can continue to operate correctly despite the input of invalid data is called as:
(A) Reliability
(B) Robustness
(C) Fault-tolerance
(D) Portability

28. Which of the following statement is false?

(A) The data flow diagram is presented in hierarchical fashion.

(B) Data flow modeling is a core modeling activity in structured analysis.

(C) Data flow diagram is formal part of UML.

(D) Data flow modeling depicts control flow.

29. For which of the following practices does requirements engineering provide appropriate mechanisms and tools?

(A) Analyzing need and validating the specification.

(B) Ambiguous specification of the solution.

(C) Risk Assessment.

(D) Implementing the system.

30. Which of the following is a common method of requirements elicitation?

(A) Transactional Analysis

(B) Observation

(C) Practical considerations

(D) Web accessibility

Answer Keys

1. A	**2.** D	**3.** D	**4.** C	**5.** B	**6.** C	**7.** A	**8.** C	**9.** C	**10.** B
11. B	**12.** A	**13.** C	**14.** A	**15.** C	**16.** A	**17.** A	**18.** D	**19.** D	**20.** B
21. C	**22.** B	**23.** B	**24.** D	**25.** A	**26.** B	**27.** B	**28.** C	**29.** A	**30.** B