

DPM's
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POST: - SYSTEM ADMINISTRATOR
TOTAL MARKS : 100 [2 Marks Each]

ANSWER KEY

1. In a feasibility study, which feasibility primarily determines whether the proposed system can be developed within available technical resources?
 - A. Economic feasibility
 - B. Operational feasibility
 - C. Technical feasibility**
 - D. Legal feasibility

2. Which SDLC model is most appropriate when requirements are expected to evolve continuously and early delivery of functional software is important?
 - A. Waterfall
 - B. Agile**
 - C. V-Model
 - D. Big Bang

3. In a Data Flow Diagram (DFD), which component represents data at rest?
 - A. Process
 - B. Data flow
 - C. Data store**
 - D. External entity

4. Which of the following is not a characteristic of a good system requirement?
 - A. Unambiguous
 - B. Testable
 - C. Implementation-dependent**
 - D. Consistent

5. In normalization, a relation is in 2NF when:
 - A. It is in 1NF and has no transitive dependency
 - B. It is in 1NF and has no partial dependency**
 - C. It has no functional dependencies
 - D. Every attribute is a candidate key

6. Which UML diagram is primarily used to represent interactions between objects over time?
 - A. Class diagram
 - B. Deployment diagram
 - C. Sequence diagram**
 - D. Component diagram

7. In UML, the relationship where one use case incorporates another use case's behavior obligatorily is:
 - A. Extend
 - B. Include**
 - C. Generalization
 - D. Association

8. Which testing technique focuses on testing the boundaries of input ranges?
 - A. Equivalence partitioning
 - B. Boundary Value Analysis**
 - C. Statement coverage

D. Mutation testing

9. If a program accepts marks from 0 to 100, which set is most appropriate for boundary-value testing?

A. 1, 25, 50, 75, 99

B. 0, 1, 50, 99, 100

C. 10, 20, 30, 40, 50

D. 0, 25, 50, 75, 100

10. Which metric measures the number of independent paths through a program?

A. Halstead complexity

B. Cyclomatic complexity

C. Function point

D. Fan-out

11. If a control-flow graph has $E = 17$ edges, $N = 12$ nodes, and $P = 1$ connected component, its cyclomatic complexity is:

A. 5

B. 6

C. 7

D. 8

12. Which type of maintenance is performed when software is modified to operate in a changed environment?

A. Corrective

B. Adaptive

C. Perfective

D. Preventive

13. A system is modified to improve performance even though no failure exists. This is:

A. Corrective maintenance

B. Adaptive maintenance

C. Perfective maintenance

D. Emergency maintenance

14. Which requirement describes how well a system should perform rather than what it should do?

A. Functional requirement

B. Non-functional requirement

C. Business rule

D. User story

15. "The system shall process 1,000 transactions per second" is primarily a:

A. Functional requirement

B. Performance requirement

C. Security requirement

D. Business requirement

16. Which SQL command is used to remove a table definition along with its data?

A. DELETE

B. REMOVE

C. DROP

D. TRUNCATE

17. What is the principal difference between DELETE and TRUNCATE in SQL?

A. DELETE removes the table structure

B. TRUNCATE generally removes all rows while retaining the table structure

C. DELETE cannot use a WHERE clause

D. TRUNCATE removes only selected rows

18. Which database constraint uniquely identifies each row in a relation?

A. Foreign key

B. Candidate attribute

C. Primary key

D. Check constraint

19. Which normal form specifically deals with transitive dependencies of non-key attributes?

A. 1NF

B. 2NF

C. 3NF

D. 4NF

20. In an ER diagram, a weak entity:

A. Has no attributes

B. Cannot have relationships

C. Depends on another entity for its identification

D. Must always have a composite primary key

21. What does a cardinality of 1:N between Department and Employee normally indicate?

A. One department can have many employees

B. Many departments have one employee

C. One employee must belong to many departments

D. Departments and employees have no relationship

22. Which architectural pattern separates an application into Model, View and Controller?

A. MVC

B. SOA

C. DAO

D. ETL

23. The primary purpose of a system prototype is to:

A. Replace the final system

B. Eliminate testing

C. Validate and clarify requirements

D. Guarantee project completion

24. Which requirement-gathering technique is generally most effective for understanding detailed workflows of an individual user?

A. Interview

B. Observation

C. Questionnaire

D. Document review

25. The main objective of requirements traceability is to:

A. Increase programming speed

B. Track requirements from origin through implementation and testing

C. Reduce database size

D. Eliminate documentation

26. In risk management, risk exposure is commonly represented as:

A. Probability × Impact

B. Cost ÷ Time

C. Impact – Probability

D. Probability + Cost

27. A project has a 20% probability of a ₹5,00,000 loss. What is its expected monetary risk exposure?

A. ₹20,000

B. ₹50,000

C. ₹1,00,000

D. ₹2,50,000

28. Which project management technique is particularly useful for identifying the sequence of activities that determines the minimum project completion time?

A. PERT/CPM

B. CRUD

C. DFD

D. ER modeling

29. If an activity on the critical path is delayed by five days, assuming no corrective action is taken, the project will generally:

A. Finish five days earlier

B. Remain unaffected

C. Be delayed by five days

D. Automatically adjust

30. Which of the following best represents CRUD operations?

A. Create, Read, Update, Delete

B. Copy, Run, Upload, Download

C. Compile, Run, Update, Debug

D. Create, Replace, Undo, Deploy

31. In a DFD, a balancing error occurs when:

A. A process has too many inputs

B. Data entering or leaving a process at one DFD level does not correspond with the parent/child level

C. There are no data stores

D. External entities are duplicated

32. Which of the following is a major disadvantage of the Waterfall model?

A. No documentation

B. Difficulty accommodating changing requirements after development begins

C. No testing phase

D. No project planning

33. In Agile development, a product backlog primarily contains:

A. Only source code

B. Prioritized requirements and work items

C. Employee attendance

D. Database backups

34. Which security principle means that a user should receive only the permissions necessary to perform their assigned task?

A. Defense in depth

B. Least privilege

C. Non-repudiation

D. Separation of duties

35. Authentication and authorization differ because:

A. Authentication determines what a user can access; authorization verifies identity

B. Authentication verifies identity; authorization determines permitted access

C. Both mean exactly the same thing

D. Authorization encrypts passwords

36. Which backup strategy normally requires the least storage space among the following after a full backup?

A. Another full backup

B. Differential backup

C. Incremental backup

D. Mirror backup

37. A system costs ₹10 lakh to implement and provides measurable benefits of ₹2 lakh per year. Ignoring maintenance costs and discounting, approximately how many years are required to recover the initial investment?

- A. 2 years
- B. 3 years
- C. 5 years**
- D. 10 years

38. Which of the following best describes cohesion in software design?

- A. Degree of dependency between modules
- B. Degree to which elements within a module belong together**
- C. Number of modules in a system
- D. Number of external interfaces

39. Which combination represents the best software design?

- A. High coupling, low cohesion
- B. Low coupling, low cohesion
- C. High coupling, high cohesion
- D. Low coupling, high cohesion**

40. A system has a requirement that “only authorized employees can access salary information.” Which security property is primarily being addressed?

- A. Availability
- B. Confidentiality**
- C. Performance
- D. Maintainability

41. In database transaction processing, ACID stands for:

- A. Atomicity, Consistency, Isolation, Durability**
- B. Accuracy, Control, Integrity, Dependency
- C. Atomicity, Concurrency, Integrity, Dependency
- D. Availability, Consistency, Isolation, Dependency

42. If a transaction fails after modifying several database records, which ACID property ensures that the partial changes are not retained?

- A. Consistency
- B. Isolation
- C. Atomicity**
- D. Durability

43. In a context-level DFD, the entire system is generally represented as:

- A. Multiple processes
- B. A single process**
- C. Multiple data stores
- D. A single data store

44. A stakeholder says, “The system must generate monthly reports.” The analyst should primarily determine:

- A. Only the programming language
- B. Report contents, users, frequency, inputs and business rules**
- C. Only the database size
- D. Only the hardware configuration

45. During regression testing, the main objective is to verify that:

- A. Only newly added functionality works
- B. Existing functionality has not been adversely affected by changes**
- C. The system has no documentation errors
- D. The database contains no duplicate records

46. तळपण ही न्हंय खंयच्या तालुक्यांत आसा?

अ. मुरगांव

आ. सांगें

इ. काणकोण

ई. तिसवाडी

47. मांडवीचे देगेर उबे आशिल्ल्या अकादेमीचें नांव सांगात.

अ. लोक अकादेमी

आ. फुटबॉल अकादेमी

इ. कला अकादेमी

ई. शेतकी अकादेमी

48. गोंयच्या शिक्षण सचीव पदाचो कारबार कोण पळयता?

अ. दैलत हवलदार

आ. आग्नेल डिसोजा

इ. विवेक नायक

ई. प्रसाद लोलयेकार

49. गोंयच्या राजभास संचालनालयाचे संचालक कोण आसा?

अ. पराग नगर्सेकार

आ. मेघना शेट गांवकार

इ. मेघनाथ परब

ई. विराज गांवकार

50. विनायक खेडेकार हांकां खंयच्या मळार काम केल्ले बदल पदमश्री फाव जाला.

अ. शिक्षण

आ. लोक संस्कृताय

इ. खेळ

ई. वैजकी सेवा