

2022

COMPUTER SCIENCE

(General)

Paper Code : V - A & B

(New Syllabus)

Full Marks : 100

Time : Three Hours

Paper Code : V - A

(Marks : 30)

Choose the correct answer.

Each question carries 1.5 Marks.

1. The person who has the central control over data application program is _____
(A) DBA
(B) System analysis
(C) Database designer
(D) None of these
2. _____ levels deals with the physical representation of the database on computer?
(A) Internal level
(B) Conceptual level
(C) External level
(D) None of these
3. _____ phases of database design is the E-R model related to ?
(A) Logical database design
(B) Conceptual database design
(C) Requirement analysis
(D) None of these
4. The term 'SQL' stands for —
(A) Standard query language
(B) Sequential query language
(C) Structured query language
(D) Server-side query language

P.T.O.

5. The architecture of database can be viewed as the _____
- (A) One level
 - (B) Three level
 - (C) Two level
 - (D) Four level
6. Which is not advantages of DBMS ?
- (A) Control database redundancy
 - (B) Data sharing
 - (C) Reduce time
 - (D) None of these
7. _____ is a disadvantages of DBMS .
- (A) Cost of hardware and software
 - (B) Complexity
 - (C) Size
 - (D) All of the above
8. _____ is a multi-valued attribute.
- (A) Roll-no
 - (B) Age
 - (C) Phone_no
 - (D) id
9. In _____ transmission mode, the flow of information is bidirectional at the same time.
- (A) Simplex
 - (B) Full-duplex
 - (C) Half-duplex
 - (D) None of these
10. The main function of transport layer is _____
- (A) Synchronization
 - (B) Node-to-node delivery
 - (C) Process to process delivery
 - (D) None of these

11. Which of the following is/are an application layer service?
- (A) Remote login
 - (B) File transfer and access
 - (C) Domain name service
 - (D) All of these
12. The OSI model consists of _____ layers
- (A) Seven
 - (B) Five
 - (C) Three
 - (D) Two
13. The _____ layer lies between the network layer and the session layer.
- (A) Physical
 - (B) Transport
 - (C) Data link
 - (D) Presentation
14. What does the acronym ISDN stands for ?
- (A) Integrated service digital network
 - (B) Indian standard digital network
 - (C) Intelligent service digital network
 - (D) None of these
15. A device that can convert digital signals to analog signals is _____
- (A) A packet
 - (B) An emulator
 - (C) A modem
 - (D) None of these
16. Software engineering primarily aims an _____
- (A) Reliable software
 - (B) Cost effective software
 - (C) Reliable and cost effective software
 - (D) None of the above

17. UML stands for —
- (A) Unified Modeling Language
 - (B) Uniform modelling language
 - (C) Unit modelling language
 - (D) None of the above
18. Alpha testing is done by —
- (A) Customer
 - (B) Tester
 - (C) Developer
 - (D) All of these
19. CASE tool is _____
- (A) Compute Analysis Software Engineering
 - (B) Component Aided Software Engineering
 - (C) Computer Analysis Software Engineering
 - (D) Computer Aided Software Engineering
20. Waterfall model is a _____
- (A) Linear
 - (B) Non-linear
 - (C) Rapid
 - (D) None of these
- _____

Paper Code : V - B

(Full Marks : 70)

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

Answer any *five* questions taking at least one question from each group. 14×5=70

Group - A

1. (a) Discuss the disadvantages of file system over database.
(b) Discuss Functional dependency with an example.
(c) Discuss unary and binary operations briefly in relational algebra. 5+5+4=14
2. (a) What is data abstraction?
(b) Explain the three-tier architecture of DBMS with the help of an example.
(c) What are the major categories of SQL commands? Explain them briefly. 2+6+6=14
3. (a) What is Normalization?
(b) Explain 2NF, 3NF and BCNF with the help of an example. 2+(4+4+4)=14

Group - B

4. (a) What is topology? Write the advantages and disadvantages of BUS and Mesh topology.
(b) Compare OSI model with TCP/IP model. (2+3+3)+6=14
5. (a) Differentiate between MAN and WAN.
(b) State the functions of the Presentation and Application layer.
(c) Discuss briefly about Transmission impairment. 3+(4+4)+3=14
6. (a) What is Internet Addressing? Discuss Internet Addressing with example?
(b) Discuss the functions of Bridge.
(c) Explain the following (any *two*) :
(i) ISDN
(ii) DNS
(iii) Gateway (2+3)+3+(3+3)=14

Group - C

7. (a) What is Prototype model? When to use it?
(b) What do you mean by error, fault and failure of software?

(c) Write the advantages and disadvantages of Spiral model. When to use it?

$(3+2)+3+(4+2)=14$

8. Write short notes on the following (any *four*) :

$3\frac{1}{2} \times 4 = 14$

(i) Software Requirement Specification (SRS)

(ii) Data Dictionary

(iii) Black box Testing

(iv) DFD

(v) Debugging
