JK

Roll No. _____

Question Booklet Number

O.M.R. Serial No. :

BCA IV Sem. (NEP Back Paper) EXAMINATION, 2025-26

DATABASE MANAGEMENT SYSTEM

Paper Code						
B	C	A	4	0	0	2

Question Booklet Series
A

Time : 1 : 30 Hours] **[Maximum Marks : 75**

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. **All** questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
4. Four alternative answers are mentioned for each question as – A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

(Remaining instructions on the last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। **सभी** प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गये हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।
4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर- A, B, C तथा D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छाँटना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

(शेष निर्देश अन्तिम पृष्ठ पर)

Rough Work

रफ कार्य

1. A data model is:
   (A) Hardware component
   (B) Collection of concepts for describing data
   (C) Programming language
   (D) Operating system
2. Which of the following is a type of data model?
   (A) Relational model
   (B) Network model
   (C) Hierarchical model
   (D) All of the above
3. In hierarchical model, data is organized as:
   (A) Graph
   (B) Tree
   (C) Table
   (D) Network
4. In relational model, data is stored in:
   (A) Files
   (B) Trees
   (C) Tables
   (D) Graphs
5. The network model represents data as:
   (A) Tables
   (B) Trees
   (C) Graphs
   (D) Arrays
6. DBMS stands for:
   (A) Data Backup Management System
   (B) Database Management System
   (C) Data Base Machine System
   (D) Data Building Management System
7. DBMS architecture defines:
   (A) Hardware structure
   (B) Software layers
   (C) Data storage
   (D) Query language
8. Three-level architecture includes:
   (A) Internal, External, Conceptual
   (B) Physical, Logical, View
   (C) Schema, Table, Row
   (D) None

9. External level describes:

(A) Physical storage

(B) User view

(C) Logical structure

(D) Data type

10. Conceptual level describes:

(A) User interface

(B) Physical storage

(C) Logical structure of database

(D) Hardware

11. Internal level describes:

(A) User view

(B) Physical storage

(C) Logical structure

(D) Query

12. Data independence means:

(A) Data duplication

(B) Data storage

(C) Data deletion

(D) Data separation from programs

13. Physical data independence refers to:

(A) Changes in logical schema

(B) Changes in physical storage

(C) Changes in view

(D) Changes in queries

14. Logical data independence refers to:

(A) Changes in physical level

(B) Changes in conceptual level

(C) Changes in hardware

(D) Changes in OS

15. Which is harder to achieve?

(A) Physical independence

(B) Logical independence

(C) Both

(D) None

16. DBMS reduces:

(A) Data security

(B) Data sharing

(C) Data availability

(D) Data redundancy

17. DBMS improves:

(A) Data inconsistency

(B) Data sharing

(C) Data redundancy

(D) Data duplication

18. Data integrity ensures:

(A) Data loss

(B) Data deletion

(C) Data duplication

(D) Data accuracy

19. Data security protects:

(A) Hardware

(B) Software

(C) Data

(D) Network

20. Concurrency control allows:

(A) Single user

(B) Multiple users

(C) No user

(D) Limited data

21. What does ER stand for?

(A) Entity Relationship

(B) Element Relation

(C) Entry Record

(D) Entity Record

22. An entity is best described as:

(A) A relationship between tables

(B) A real-world object distinguishable from others

(C) A data type

(D) A constraint

23. A collection of similar entities is called:

(A) Entity type

(B) Relation

(C) Attribute

(D) Entity set

24. Which of the following is an example of an entity?

(A) Age

(B) Student

(C) Relationship

(D) Degree

25. Attributes are:

(A) Relationships between entities

(B) Keys only

(C) Tables in database

(D) Properties of entities

26. Which attribute uniquely identifies an entity?

(A) Simple key

(B) Composite key

(C) Primary key

(D) Derived key

27. A key attribute is used to:

(A) Store data

(B) Identify entities uniquely

(C) Create relationships

(D) Normalize tables

28. Which of the following is a composite attribute?

(A) Age

(B) Salary

(C) Roll number

(D) Address

29. Derived attributes are:

(A) Stored in database

(B) Calculated from other attributes

(C) Primary keys

(D) Foreign keys

30. Relationship in ER model represents:

(A) Attributes

(B) Association among entities

(C) Keys

(D) Tables

31. Degree of a relationship refers to:

(A) Number of attributes

(B) Number of tables

(C) Number of keys

(D) Number of participating entities

32. A binary relationship involves:

(A) One entity

(B) Two entities

(C) Three entities

(D) Four entities

33. Cardinality ratio defines:

(A) Number of attributes

(B) Relationship type

(C) Number of entity occurrences

(D) Key constraints

34. One-to-many relationship means:

(A) One entity relates to many entities

(B) Many entities relate to one entity

(C) Both

(D) None

35. Participation constraint specifies:

(A) Attribute type

(B) Entity participation in relationship

(C) Key value

(D) Table structure

36. A weak entity is one that:

(A) Has no attributes

(B) Cannot exist without another entity

(C) Has multiple keys

(D) Is independent

37. Weak entity depends on:

(A) Strong entity

(B) Attribute

(C) Key

(D) Relation

38. Identifying relationship is used for:

(A) Strong entity

(B) Keys

(C) Attributes

(D) Weak entity

39. In ER diagram, weak entity is represented by:

(A) Single rectangle

(B) Double rectangle

(C) Ellipse

(D) Diamond

40. In ER diagram, relationship is represented by:

(A) Rectangle

(B) Ellipse

(C) Diamond

(D) Circle

41. Data normalization is used to:

(A) Increase redundancy

(B) Reduce redundancy

(C) Delete data

(D) Store images

42. Functional dependency is represented as:

(A) $A \rightarrow B$

(B) A = B

(C) A + B

(D) A / B

43. In functional dependency $A \rightarrow B$, A is called:

(A) Dependent

(B) Determinant

(C) Attribute

(D) Relation

44. Which normal form removes partial dependency?

(A) 1NF

(B) BCNF

(C) 3NF

(D) 2NF

45. First Normal Form (1NF) requires:

(A) No redundancy

(B) Atomic attributes

(C) No dependency

(D) Composite keys

46. Which normal form removes transitive dependency?

(A) 1NF

(B) 2NF

(C) 3NF

(D) 4NF

47. A relation is in BCNF if:

(A) All attributes are keys

(B) Every determinant is a candidate key

(C) No attributes exist

(D) Only one key exists

48. Candidate key is:

(A) Non-unique key

(B) Foreign key

(C) Composite key

(D) Minimal super key

49. Super key is:

(A) Minimum key

(B) Any set of attributes that uniquely identifies a tuple

(C) Foreign key

(D) Primary key only

50. Prime attribute is:

(A) Part of candidate key

(B) Non-key attribute

(C) Foreign key

(D) Derived attribute

51. Non-prime attribute is:

(A) Not part of candidate key

(B) Key attribute

(C) Primary key

(D) Composite key

52. Partial dependency occurs when:

(A) Non-key depends on whole key

(B) Non-key depends on part of composite key

(C) Key depends on non-key

(D) No dependency exists

53. Transitive dependency occurs when:

(A) A $\rightarrow$B and B $\rightarrow$ C

(B) A $\rightarrow$ B only

(C) B $\rightarrow$ A

(D) No dependency

54. 2NF requires:

(A) 1NF + no partial dependency

(B) No redundancy

(C) No transitive dependency

(D) Only keys

55. 3NF requires:

(A) 1NF

(B) 2NF + no transitive dependency

(C) Only atomic values

(D) Only keys

56. BCNF is stricter than:

(A) 1NF

(B) 2NF

(C) 3NF

(D) All of the above

57. Multivalued dependency is handled in:

(A) 2NF

(B) 3NF

(C) 4NF

(D) 5NF

58. Join dependency is handled in:

(A) 3NF

(B) 4NF

(C) 5NF

(D) BCNF

59. Normalization process is:

(A) Top-down

(B) Bottom-up

(C) Random

(D) Sorting

60. Denormalization is:

(A) Removing tables

(B) Adding redundancy

(C) Removing redundancy

(D) Adding keys

61. A relation in DBMS is also known as:

(A) Column

(B) Row

(C) Table

(D) Key

62. A tuple in a relation represents:

(A) Column

(B) Row

(C) Table

(D) Key

63. Attribute refers to:

(A) Row

(B) Key

(C) Table

(D) Column

64. Domain of an attribute means:

(A) Table name

(B) Set of possible values

(C) Key

(D) Index

65. Degree of a relation is:

(A) Number of rows

(B) Number of columns

(C) Number of keys

(D) Number of tables

66. Cardinality of a relation is:

(A) Number of columns

(B) Number of keys

(C) Number of rows

(D) Number of attributes

67. Primary key must be:

(A) Null

(B) Optional

(C) Duplicate

(D) Unique and not null

68. Foreign key is used to:

(A) Identify tuple

(B) Link relations

(C) Remove redundancy

(D) Define domain

69. Integrity constraints ensure:

(A) Data redundancy

(B) Data accuracy and consistency

(C) Data deletion

(D) Data duplication

70. Entity integrity constraint ensures:

(A) No duplicate rows

(B) Domain validity

(C) Foreign key exists

(D) Primary key is not null

71. Referential integrity ensures:

(A) Valid attribute values

(B) Valid foreign key references

(C) Unique keys

(D) No redundancy

72. Relational algebra is:

(A) Procedural language

(B) Non-procedural language

(C) Programming language

(D) Query language only

73. Selection operation is denoted by:

(A) π

(B) σ

(C) u

(D) $-$

74. Projection operation is denoted by:

(A) σ

(B) $\times$

(C) u

(D) π

75. Union operation requires:

(A) Same number of attributes

(B) Same domain

(C) Compatible relations

(D) All of the above

76. Cartesian product is denoted by:

(A) $\times$

(B) u

(C) σ

(D) π

77. Join operation combines:

(A) Rows

(B) Columns

(C) Two relations

(D) Keys

78. Natural join is based on:

(A) All attributes

(B) Common attributes

(C) Keys only

(D) Foreign key only

79. SQL stands for:

(A) Structured Query Language

(B) Simple Query Language

(C) Sequential Query Language

(D) Standard Query List

80. SQL is a:

(A) Procedural language

(B) Machine language

(C) Programming language only

(D) Non-procedural language

81. A transaction is:

(A) A single query

(B) A logical unit of work

(C) A table

(D) A key

82. Which property ensures all operations of a transaction are completed or none?

(A) Consistency

(B) Durability

(C) Isolation

(D) Atomicity

83. Which ACID property ensures database remains valid after transaction?

(A) Atomicity

(B) Consistency

(C) Isolation

(D) Durability

84. Isolation ensures:

(A) Transactions run independently

(B) Data is permanent

(C) Data is deleted

(D) Data is duplicated

85. Durability ensures:

(A) Temporary storage

(B) Permanent storage after commit

(C) Data deletion

(D) Data duplication

86. Concurrency control is used to:

(A) Increase redundancy

(B) Delete data

(C) Manage simultaneous transactions

(D) Create tables

87. A schedule is:

(A) Sequence of operations

(B) Table structure

(C) Key constraint

(D) Query

88. Serial schedule means:

(A) Transactions overlap

(B) Transactions execute one after another

(C) Parallel execution

(D) Random execution

89. Conflict serializability ensures:

(A) Same result as serial schedule

(B) Faster execution

(C) Data deletion

(D) Redundancy

90. Locking is used to:

(A) Delete data

(B) Control access

(C) Store data

(D) Normalize tables

91. Shared lock allows:

(A) Read only

(B) Write only

(C) Delete

(D) Insert

92. Exclusive lock allows:

(A) Read only

(B) Write only

(C) Both read and write

(D) No access

93. Deadlock occurs when:

(A) One transaction waits

(B) Two transactions wait for each other

(C) Data is lost

(D) Data is duplicated

94. Starvation occurs when:

(A) Transaction never executes

(B) Transaction executes fast

(C) Data is lost

(D) Data is duplicated

95. Two-phase locking ensures:

(A) Serializability

(B) Redundancy

(C) Data deletion

(D) Backup

96. Growing phase in 2PL means:

(A) Releasing locks

(B) Writing data

(C) Deleting data

(D) Acquiring locks

97. Shrinking phase means:

(A) Acquiring locks

(B) Releasing locks

(C) Reading data

(D) Writing data

98. Timestamp ordering uses:

(A) Locking

(B) Keys

(C) Time values

(D) Tables

99. Recovery techniques deal with:

(A) Data deletion

(B) System failure handling

(C) Query execution

(D) Table creation

100. Log file is used for:

(A) Storing queries

(B) Indexing

(C) Deleting data

(D) Recovery

Rough Work

रफ कार्य

Example :

Question :

Q. 1 (A) (●) (C) (D)

Q. 2 (A) (B) (●) (D)

Q. 3 (A) (●) (C) (D)

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager & cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question booklet, then after showing it to the invigilator, get another question booklet of the same series.

उदाहरण :

प्रश्न :

प्रश्न 1 (A) (●) (C) (D)

प्रश्न 2 (A) (B) (●) (D)

प्रश्न 3 (A) (●) (C) (D)

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ.एम.आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ.एम.आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा कक्ष में लॉग-बुक, कैल्कुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्न-पुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्न-पुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।