2020

COMPUTER SCIENCE (General)

Paper Code : V-A & B

[New Syllabus]

Full Marks : 100   Time : Three Hours

Important Instructions
for Multiple Choice Question (MCQ)

- Write Subject Name and Code, Registration number, Session and Roll number in the space provided on the Answer Script.

  Example : Such as for Paper III-A (MCQ) and III-B (Descriptive).

  Subject Code : | III | A | & | B |

  Subject Name :

- Candidates are required to attempt all questions (MCQ). Below each question, four alternatives are given [i.e. (A), (B), (C), (D)]. Only one of these alternatives is 'CORRECT' answer. The candidate has to write the Correct Alternative [i.e. (A)/(B)/(C)/(D)] against each Question No. in the Answer Script.

  Example — If alternative A of 1 is correct, then write :

  1. — A

- There is no negative marking for wrong answer.

মাল্টিপল চয়েস প্রশ্নের (MCQ) জন্য জরুরী নির্দেশাবলী

- উত্তরপত্রে নির্দেশিত স্থানে বিষয়ের (Subject) নাম এবং কোড, রেজিস্ট্রেশন নম্বর, সেশন এবং রোল নম্বর লিখতে হবে।

  উদাহরণ — যেমন Paper III-A (MCQ) এবং III-B (Descriptive)।

  Subject Code : | III | A | & | B |

  Subject Name : [   ]

- পরীক্ষার্থীদের সবগুলি প্রশ্নের (MCQ) উত্তর দিতে হবে। প্রতিটি প্রশ্নে চারটি করে সম্ভাব্য উত্তর, যথাক্রমে (A), (B), (C) এবং (D) করে দেওয়া আছে। পরীক্ষার্থীকে তার উত্তরের স্বপক্ষে (A) / (B) / (C) / (D) সঠিক বিকল্পটিকে প্রশ্ন নম্বর উল্লেখসহ উত্তরপত্রে লিখতে হবে।

  উদাহরণ — যদি 1 নম্বর প্রশ্নের সঠিক উত্তর **A** হয় তবে লিখতে হবে :

          1. — A

- ভুল উত্তরের জন্য কোন নেগেটিভ মার্কিং নেই।

Paper Code : V - A

Full Marks : 30   Time : Thirty Minutes

Choose the correct answer.

Each question carries 1.5 mark.

1. In OSI network architecture, the routing is performed by —

   (A) Transport layer

   (B) Data link layer

   (C) Network Layer

   (D) Session Layer

2. Working of the WAN generally involves —

   (A) Telephone lines

   (B) Microwaves

   (C) Satellites

   (D) All of the above

3. The method of communication in which transmission takes place in both directions, but only in one direction at a time is called —

   (A) simplex

   (B) four wire circuit

   (C) full duplex

   (D) half duplex

4. The underlying Transport layer protocol used by SMTP is —

   (A) TCP

   (B) UDP

   (C) Either TCP or UDP

   (D) None of the mentioned

5. A _____ connection provides a dedicated link between two devices.

   (A) Point-to-Point

   (B) Multipoint

   (C) Both

   (D) None

Turn Over

6. The physical layer is responsible for movements of individual _____ from one hop (node) to the next.

   (A) frames

   (B) messages

   (C) packets

   (D) bits

7. Which one is not a layer of the TCP/IP network model?

   (A) Physical

   (B) Application

   (C) Data link

   (D) Session

8. The html code : <u><b> Hello <b><u> will display —

   (A) Hello

   (B) **Hello**

   (C) Hello

   (D) **Hello**

9. _____ are used to represent an entity set in an ERD.

   (A) Eclipses

   (B) Rectangles

   (C) Diamonds

   (D) Double rectangles

10. In a classical waterfall model, which phase precedes the design phase?

    (A) Coding and unit testing

    (B) Maintenance

    (C) Requirements analysis and specification

    (D) Feasibility study

11. Among development phases of software life cycle, which phase typically consumes the maximum effort?

    (A) Requirements analysis and specification

    (B) Design

    (C) Coding

    (D) Testing

Turn Over

12. The context diagram of a DFD is also known as —

(A) level 0 DFD

(B) level 1 DFD

(C) level 2 DFD

(D) none of the above

13. _____, also called behavioral testing which focuses on the functional requirements of the software.

(A) White-box testing

(B) Control structure testing

(C) Black-box testing

(D) Gray-box testing

14. Which one of the following is not an example of SDLC model?

(A) Waterfall Model

(B) Spiral Model

(C) Prototype Model

(D) Protocol Model

15. In the relational modes, cardinality is known as —

(A) Number of tuples

(B) Number of attributes

(C) Number of tables

(D) Number of constraints

16. The database schema is written in —

(A) HLL

(B) DML

(C) DDL

(D) DCL

17. A relational database developer refers to a record as —

(A) a criteria

(B) a relation

(C) a tuple

(D) an attribute

18. Count function in SQL returns the number of —

    (A) values

    (B) distinct values

    (C) groups

    (D) columns

19. A set of all possible data values is called —

    (A) attribute

    (B) degree

    (C) tuple

    (D) domain

20. In E-R diagram generalization is represented by —

    (A) Ellipse

    (B) Dashed ellipse

    (C) Rectangle

    (D) Triangle

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2020

COMPUTER SCIENCE (General)

Paper Code : V - B

[New Syllabus]

Full Marks : 70   Time : Two Hours Thirty Minutes

The figures in the margin indicate full marks.

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

Group - A

1. (a) Explain Primary Key and Foreign Key with an example.   5

   (b) List the advantages of a DBMS as compare to a traditional file-processing system.   5

   (c) Explain the differences between a relation and relation schema with an example.   4

2. (a) Draw the ER diagram of the student attendance system.   6

   (b) Describe the select and project operation of relational algebra.   5

   (c) What is SQL? Give two examples of SQL query.   1+2

3. (a) Explain the difference between a weak and a strong entity set.   2

   (b) Write short notes on (any *three*) :   4×3=12

      (i) ANSI/SPARC architecture

      (ii) BCNF

      (iii) Sequential file organization

      (iv) Functional dependencies

Group - B

4. (a) Compare Half Duplex and Full Duplex mode of Data Transfer.   4

   (b) Describe the five components of a Data Communication System with suitable diagrams.   5

   (c) Compare centralized and distributed computing.   5

Turn Over

5. (a) Describe Datalink layer in details. 5

(b) Discuss DNS. 5

(c) Explain Port address. 4

6. (a) What do you mean by encapsulation? 2

(b) Write short notes on (any *three*) : 4×3=12

  (i) ISDN

 (ii) MAC Address

(iii) ISP

(iv) WAN

Group - C

7. (a) Explain the problems that might be faced by an organization if it does not follow any software life cycle model. 4

(b) Briefly discuss about spiral model. 6

(c) Discuss three important parts of an SRS document. 4

8. (a) Discuss the aim of the structured analysis activity. 3

(b) Write down the importance of data dictionary in the context of good software design. 3

(c) Explain why boundary value analysis is so important for the design of black box test suite for a problem. 4

(d) Write short note on (any *one*) : 4×1=4

 (i) Structure Charts

(ii) Flow chart

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