

P - III (1+1+1) G / 21 (N)

2021

## COMPUTER SCIENCE (General)

Paper Code : V - A & B

[New Syllabus]

### 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
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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
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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. Which of these are the advantages of database system?
  - (A) Data abstraction
  - (B) Program-data independence
  - (C) Centralized data management
  - (D) All of these
  
2. \_\_\_\_\_ levels deals with the physical representation of the database on the computer?
  - (A) Internal level
  - (B) Conceptual level
  - (C) External level
  - (D) None of these
  
3. \_\_\_\_\_ levels of abstraction deals with the user's view of the database?
  - (A) Internal level
  - (B) Conceptual level
  - (C) External level
  - (D) None of these

4. \_\_\_\_\_ Phases of database design is the E-R model related to?
- (A) Conceptual database design
  - (B) Logical database design
  - (C) Requirement analysis
  - (D) None of these
5. In an E-R diagram \_\_\_\_\_ is used for representing an entity.
- (A) Square
  - (B) Rectangle
  - (C) Diamond-shaped box
  - (D) Ellipse
6. A schema describes —
- (A) Data elements
  - (B) Records and files
  - (C) Record relationship
  - (D) All of the above
7. The relational model includes —
- (A) Manipulative components
  - (B) Integrity constraints
  - (C) Structural Components
  - (D) All of these

8. SMTP stands for —
- (A) Simple Mail Technique Protocol
  - (B) Simple Mail Transfer Protocol
  - (C) Simple Money Transfer Protocol
  - (D) None of the above
9. \_\_\_\_\_ address(es) is needed for the effective communication.
- (A) MAC
  - (B) IP
  - (C) Port address
  - (D) All of these
10. What does the acronym ISDN stand for?
- (A) Indian Standard Digital Network
  - (B) Integrated Services Digital Network
  - (C) Intelligent Services Digital Network
  - (D) None of these
11. The OSI model consist of \_\_\_\_\_ layer.
- (A) Three
  - (B) Five
  - (C) Seven
  - (D) Eight

12. Decryption and encryption of data are the responsibilities of the \_\_\_\_\_ layer.
- (A) Physical
  - (B) Data link
  - (C) Presentation
  - (D) Session
13. Which type of a network covers a metropolitan area?
- (A) LAN
  - (B) MAN
  - (C) WAN
  - (D) All of these
14. DNS stands for —
- (A) Domain Name Server
  - (B) Domain Name System
  - (C) Data Name System
  - (D) None of these
15. Software engineering primarily aims on —
- (A) Reliable software
  - (B) Cost effective software
  - (C) Reliable and cost effective software
  - (D) None of the above

16. A COCOMO model is —
- (A) Common Cost Model
  - (B) Constructive Cost Model
  - (C) Complete Cost Model
  - (D) Comprehensive Cost Model
17. SRS stands for —
- (A) Software Requirements Specification
  - (B) Software Requirements System
  - (C) Software Requirements Session
  - (D) None of the above
18. Waterfall model is a \_\_\_\_\_ model.
- (A) Linear
  - (B) Rapid
  - (C) Iterative
  - (D) interactive
19. Software testing is done to —
- (A) correct a error
  - (B) show absence of defect
  - (C) find an error
  - (D) none of these

20. The first step in software development life cycle is —

- (A) Database design
  - (B) Graphical user interface
  - (C) System design
  - (D) Preliminary investigation and analysis
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2021

## 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* question from each group.

14×5=70

### Group - A

1. (a) Discuss the disadvantages of file system over database.  
(b) Discuss unary and binary operations in relational algebra.  
(c) Discuss the notations of E-R diagram. 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 1NF, 2NF and 3NF with the help of an example. 2+(4+4+4)=14

### Group - B

4. (a) What is topology? Write the advantages and disadvantages of Mesh and Ring topology.  
(b) Compare OSI model with TCP/IP model. (2+3+3)+6=14

5. (a) Differentiate between Intranet and Internet.  
 (b) State the functions of the Network and Transport layer.  
 (c) Discuss briefly about Transmission impairment.  $3+(4+4)+3=14$
6. (a) What is Internet Addressing? Discuss Internet Addressing with example?  
 (b) Write a short note on e-mail.  
 (c) Explain the following (any *two*) :  
 (i) ISDN  
 (ii) DNS  
 (iii) IPV6  $(2+3)+3+(3+3)=14$

**Group - C**

7. (a) What is waterfall 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. (a) Differentiate between White box and black box testing.  
 (b) Write short notes on the following (any *three*) :  
 (i) Software Requirement Specification (SRS)  
 (ii) Software Life Cycle  
 (iii) Data Dictionary  
 (iv) DFD  $5+(3+3+3)=14$