

2020

COMPUTER SCIENCE (General)

Paper Code : I-A & B

[New Syllabus]

(Supplementary)

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 :

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- 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 : I-A

Full Marks : 30

Time : Thirty Minutes

Choose the correct answer.

Each question carries 1.5 marks.

1. _____ is also known as computer's brain.
 - (A) Monitor
 - (B) CPU
 - (C) Keyboard
 - (D) None of these

2. What does ASCII stand for —
 - (A) American Standards Code for Information Interchange
 - (B) American Standards Code for Information Interconnect
 - (C) American Standards Code for Information Intelligent
 - (D) None of these

3. Which is the part of the computer system that one can physically touch?
 - (A) Data
 - (B) Software
 - (C) Hardware
 - (D) None of these

4. What does CISC stand for —
 - (A) Complex Instruction Set Computer
 - (B) Complex Instruction Set Computation
 - (C) Complex Instruction Set Calculations
 - (D) None of these

5. Which of the following is not an input device —
- (A) Keyboard
 - (B) Printer
 - (C) Microphone
 - (D) Mouse
6. Which of the following is a sequential circuits —
- (A) Counter
 - (B) Adder
 - (C) Decoder
 - (D) Encoder
7. Computations and logical operations are performed by the —
- (A) RAM
 - (B) ALU
 - (C) Register
 - (D) ROM
8. The basic unit of storage is the —
- (A) Flip-flop
 - (B) DVD
 - (C) CD
 - (D) None of these
9. How many bits are there in a byte ?
- (A) 20
 - (B) 4
 - (C) 6
 - (D) 8

10. The cache memory is placed between the _____ and _____.
- (A) RAM, ROM
 - (B) CPU, main memory
 - (C) ROM, auxiliary memory
 - (D) None of these
11. Which logic gate is known as universal logic gate ?
- (A) AND
 - (B) NAND
 - (C) OR
 - (D) NOT
12. Which of the following gates performs the logical multiplication operation ?
- (A) OR
 - (B) AND
 - (C) NOT
 - (D) None of these
13. Which of the following are the methods to simplify a Boolean function ?
- (A) Algebraic
 - (B) K-map
 - (C) Both (A) and (B)
 - (D) Neither (A) nor (B)
14. The expression $Y = AB + BC + AC$ shows the _____ operation.
- (A) POS
 - (B) SOP
 - (C) AND
 - (D) OR

15. The expression for Absorption law is given by —
- (A) $A+AB = A$
 - (B) $A+AB = B$
 - (C) $A+B=B+A$
 - (D) None of these
16. According to Boolean law (Boolean Addition) : $1+1$
- (A) 0
 - (B) 1
 - (C) 2
 - (D) 3
17. De Morgan's theorem states that —
- (A) $(AB)' = (A' + B')$
 - (B) $(A + B)' = (A' \cdot B')$
 - (C) Both (A) and (B)
 - (D) Neither (A) nor (B)
18. According to Boolean law : $A + A$
- (A) $2A$
 - (B) A
 - (C) 1
 - (D) 0

19. A product of sums expression is a logical product of two or more logical sum terms is called —
- (A) SOP
 - (B) POS
 - (C) Both (A) and (B)
 - (D) Neither (A) nor (B)
20. What does MAR stand for —
- (A) Main Address Register
 - (B) Memory Address Register
 - (C) Memory Access Register
 - (D) None of these
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2020

COMPUTER SCIENCE (General)

Paper Code : I-B

[New Syllabus]

(Supplementary)

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
and at most *two* from each group.

Group - A

1. (a) Perform the following conversion : 3×2=6
 - (i) $(A3B)_{16} = (?)_{10}$
 - (ii) $(11011.011)_2 = (?)_{16}$
 - (iii) $(376)_8 = (?)_2$
- (b) What do you mean by Information and Data? 3
- (c) Distinguish between system software and application software. 5
2. (a) What are high-level language and machine language ? What are the relative merits of high level language over machine language ? 2+3=5
- (b) What is super and personal computer ? 2+2=4
- (c) What is algorithm ? What are the differences between algorithm and flowchart ? 2+3=5

3. (a) What is e-mail ? 2
 (b) What is an Internet ? 2
 (c) Discuss bus and mess topology. Compare them. 6
 (d) Write short note : 2+2=4
 (i) LAN
 (ii) MAN

Group - B

4. (a) Discuss the role of the following register : 2+2=4
 (i) Program counter
 (ii) accumulator
 (b) Define the following : 2+2=4
 (i) Instruction
 (ii) Program
 (c) Discuss the following addressing mode : 2+2+2=6
 (i) Immediate
 (ii) Direct
 (iii) Indirect
5. (a) What do you mean by Instruction cycle ? Explain all its phases. 6
 (b) What is interrupt 2
 (c) What is a control unit ? 2
 (d) Describe characteristics of CISC and RISC 4
6. (a) What does memory mean? 2
 (b) Discuss the types of main memory? 5
 (c) What is cache memory ? Also, explain its operation. 2+2=4
 (d) What do you mean by volatile and non-volatile memory ? 3

Group - C

7. (a) Which gates are called universal logic gate and why? 4
(b) Draw and explain the circuit diagram of a full adder using two half-adder. 6
(c) Simplify the expression : $A'.B + A.B+A'.B'$ 4
8. (a) Discuss combinational logic circuit and sequential logic circuit? 6
(b) Explain 4×1 MUX with truth table and circuit diagram. 5
(c) Discuss De-Morgan's theorems. 3
9. (a) What is flip-flop ? Explain J-K Flip-Flop with truth table ? 2+4=6
(b) What is counter ? Write the truth table of 4-bit binary ripple counter ? 1+5=6
(c) What are the differences between : Asynchronous and Synchronous counter. 2
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