

Roll No.

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Total No. of Printed Pages – 7

614 R

[Regular]

COMPUTER SCIENCE

(Science)

(For Students Registered in 2021)

2023(A)

COMPUTER SCIENCE

(SCIENCE)

Full Marks : 70

Time : 3 hours

The figures in the right-hand margin indicate marks.

Answer **all** questions from Group – A and B.
Only **ten** bits from Q.No.3 and only **three** bits
from Q.No.4. Answer any **three** questions
from Group – C

(Turn Over)

GROUP – A

1. Choose the *correct* answer : $1 \times 10 = 10$

ଠିକ୍ ଉତ୍ତରଟି ବାଛି ଲେଖ :

- (i) A function having same name as class name is called
- Destructor
 - Special function
 - Default function
 - Constructor
- (ii) Wrapping up data and methods into single unit is called
- Abstraction
 - Encapsulation
 - Polymorphism
 - Inheritance
- (iii) A variable which holds the address of another variable is called
- Pointer
 - Global variable
 - Local variable
 - Actual parameter
- (iv) Which of the following is a linear data structure ?

- Stack
 - Queue
 - Array
 - All of the above
- (v) In which data structure insert and delete operations are performed at the same end ?
- Stack
 - Queue
 - Array
 - None of the above
- (vi) Which of the following SQL command is used to sort a table ?
- GROUP BY
 - IN BETWEEN
 - ORDER BY
 - DISTINCT
- (vii) CREATE TABLE is a _____ language.
- DML
 - DDL
 - DCL
 - TCL

(4)

(viii) Which of the following logic gate is called as universal gate ?

- (a) AND
- (b) OR
- (c) NOT
- (d) NAND

(ix) In Boolean algebra , $x + \bar{x} = \underline{\hspace{2cm}}$.

- (a) 0
- (b) 1
- (c) x
- (d) \bar{x}

(x) Which among the following is the highest data transfer rate ?

- (a) Kbps
- (b) Mbps
- (c) Gbps
- (d) Tbps

2. Expand the following :

ନିମ୍ନଲିଖିତଗୁଡ଼ିକର ସଂପ୍ରସାରଣ କର :

- (a) FIFO
- (b) SQL
- (c) Mbps
- (d) FTP

(5)

(e) SMTP

(f) HTML

(g) HTTP

(h) WWW

(i) WAN

(j) TCP

GROUP – B

3. Answer any *ten* of the following questions within 30 words each : $2 \times 10 = 20$

ପ୍ରତ୍ୟେକଟି ୩୦ଟି ଶବ୍ଦ ମଧ୍ୟରେ ନିମ୍ନଲିଖିତ ଯେକୌଣସି ଦଶଟିର ଉତ୍ତର ଲେଖ :

- (a) What is polymorphism ? Give examples.
- (b) What is meant by default constructor ?
- (c) What is meant by reference variable ?
- (d) What is meant by alternate key ?
- (e) Write four examples of mathematical functions used in SQL.
- (f) Write absorption property of Boolean algebra.
- (g) What is meant by worms ?
- (h) What is linear search ?

(6)

(7)

- (i) Convert the following INFIX notation into POSTFIX notation.

$$3 + 5 * 6 - 4 + 2$$

- (j) Write different operations on queue data structure.

- (k) Explain *new* and *delete* operators in C++.

- (l) Write the syntax for DELETE command in SQL.

4. Answer any *three* of the following questions within 50 words each :

$$3 \times 3 = 9$$

ପ୍ରତ୍ୟେକଟି ୫୦ଟି ଶବ୍ଦ ମଧ୍ୟରେ ନିମ୍ନଲିଖିତ ଯେକୌଣସି ତିନୋଟିର ଉତ୍ତର ଲେଖ :

- (a) Simplify using Boolean algebra :

$$x + xy + xy'$$

- (b) Write different file handling functions in C++.

- (c) Give at least three uses of database.

- (d) How to protect yourself from cybercrime ?

- (e) What is destructor in C++ ?

GROUP - C

Answer any **three** of the following questions :

$$7 \times 3 = 21$$

ନିମ୍ନଲିଖିତ ପ୍ରଶ୍ନଗୁଡ଼ିକରୁ ଯେ କୌଣସି ତିନୋଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅ :

5. What is meant by pass by value and pass by reference ? Give examples.

6. What are class and object ? Give real life examples.

7. Explain various operations on stack.

8. Draw the circuit diagram of the following Boolean expression.

$$Y = A\bar{B} + \bar{A}B + C$$

9. Write a short note on 4G technology.