

Roll No. ....

Total No. of Questions : 5]  
(2034)

[Total No. of Printed Pages : 4

**BCA (CBCS) RUSA II Semester  
Examination**

**3769**

**COMMUNICATIVE ENGLISH**

Paper : BCA-0202

**Time : 3 Hours]**

**[Maximum Marks : 70**

**Note** :- Attempt *five* questions in all. Part-A is compulsory.  
Select *one* question each from Parts-B, C, D and E.

**Part-A**

**(Compulsory Question)**

I (A) Do as directed :

(i) Suman ..... (write) poetry.

(Fill in the blank with the correct  
form of the verb)

(ii) He responded ..... to my email.

(Fill in the blank with an  
appropriate adverb)

(iii) Be careful, the knife is .....

(Fill in the blank with a  
suitable adjective)

(iv) Give a synonym of the word 'ability'.  
Use the synonym in a sentence.

(v) Use the idiom 'beat around the bush' in a  
sentence.

(vi) Do you prefer orange juice ?

(Rewrite as a declarative sentence)

(vii) An analytical report is an interpretative  
report. (State whether true or false)

(viii) Body language is important to effective  
listening. (State whether true or false)

(ix) ..... is the study of the body's  
physical movements.

(x) A list of the individual items that need to  
be discussed in the meeting is called :

(a) Notice

(b) Minutes

(c) Agenda

1×10=10

**CH-569**

( 1 )

Turn Over

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**CH-569**

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(B) Answer the following in **25–50** words each :

- (i) Write a notice for a staff meeting of a company.
- (ii) What is a summary ?
- (iii) Why is pitch of voice important in communication ?
- (iv) Write a note on the reasons for failure in an interview.
- (v) How can one overcome nervousness before a presentation ?

4×5=20

**Part-B**

10×1=10

2 Rewrite the following sentences in passive voice :

- (i) Sunil ate four chapaties at lunch.
- (ii) Shimla is visited by thousands of tourists every year.
- (iii) Hema presented the report yesterday.
- (iv) Our road is being repaired.
- (v) He brought vegetables from the main market

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Turn Over

*Or*

Rewrite the following passage using the correct tenses of the underlined words :

As virtual spaces and gadgets are turn into an extension of our physical selves, it's important to disengaging from technology. Following these simple strategies : sets time limits for gadget use; put aside gadgets when ate food, reads, or watch something. Learn to switching off at least an hour prior to went to sleep to relaxes your mind.

**Part-C**

10×1=10

3. Write a job application for the post of a sales executive.

*Or*

Make a curriculum vitae for your first job application for the post of a salesperson with an automobile dealer.

**Part-D**

10×1=10

4. Write a note on the skills required to make an effective presentation.

*Or*

What preparations are to be made before attending a meeting ?

**Part-E**

10×1=10

5. What do you understand by flow of communication ?

*Or*

How can kinesics be used for effective communication ?

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**BCA (CBCS) RUSA IInd Semester  
Examination**

**3772**

**DATABASE MANAGEMENT SYSTEM**

Paper : BCA-0205

**Time : 3 Hours]**

**[Maximum Marks : 70**

**Note** :- Attempt *five* questions in all. Part-A is compulsory.  
Attempt *one* question each from Parts-B, C, D and E.

**Part-A**

**(Compulsory Question)**

1. (A) Choose the correct answer :

- (i) ..... offers the ability to query the data and insert, alter, and delete tuples.
- (a) Transaction Control Language (TCL)
  - (b) Data Control Language (DCL)
  - (c) Data Definition Language (DDL)
  - (d) Data Manipulation Language (DML)

(ii) A ..... means that one record in a particular record type can be related to many records in another record type and vice-versa.

- (a) One-to-one relationship
- (b) One-to-many relationship
- (c) Many-to-one relationship
- (d) Many-to-many relationship

(iii) What is the name given to the database management system which is able to handle full text data, image data, audio and video ?

- (a) Full media
- (b) Graphics media ✓
- (c) Multimedia
- (d) Hypertext

**CH-572**

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(iv) Which of the following is Database Language ?

- (a) Data Definition Language
- (b) Data Manipulation Language
- (c) Query Language
- (d) All of these

(v) Each of data files has a ..... that describe the way the data is stored in the file.

- (a) File structure
- (b) Records
- (c) Fields
- (d) Database

(vi) A file produced by a spreadsheet.

- (a) Is generally stored on disk in an ASCII text format
- (b) Can be used as it by the DBMS
- (c) Can be used for graphic
- (d) All of these

(vii) The master list of an indexed file :

- (a) Is sorted in ascending order
- (b) Contains only a list of keys and record numbers
- (c) Has a number assigned to each record
- (d) Both (b) and (c)

(viii) A form defines :

- (a) Where data is placed on the screen
- (b) The width of each field
- (c) Both (a) and (b)
- (d) None of these

(ix) Queries to a database :

- (a) Are written in English
- (b) Can use aggregate functions like SUM and COUNT
- (c) Both (a) and (b)
- (d) None of these

(x) Column header is refer as :

- (a) Table
- (b) Relation
- ~~(c)~~ Attributes
- (d) Domain

1×10=10

(B) Write short notes for the following :

- (i) Entity Relationship Model
- (ii) Direct Files
- (iii) First Normal Form
- (iv) Primary Key
- (v) Dependency Prevation

4×5=20

CH-572

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Turn Over

**Part-B**

10×1=10

**Note** :- Attempt any *one* question.

- 2. Elaborate the points that make DBMS a better choice as compared to traditional file-based systems.
- 3. What is data abstraction in DBMS and what are its three levels ? <https://www.hpboardonline.com>

**Part-C**

10×1=10

**Note** :- Attempt any *one* question.

- 4. What do you mean by indexing ? How many types of indexes are there ? Explain.
- 5. How is indexing done using B-Tree Structure ?

**Part-D**

10×1=10

**Note** :- Attempt any *one* question.

- 6. Explain the Third Normal form and BCNF in detail.
- 7. What is Functional Dependency ?

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**Part-E**

10×1=10

*Note :-* Attempt any *one* question.

8. Write the steps to create a query. Distinguish between Design Area and Design Grid of Query Design window.
9. What is Report ? What are the different report views ? Elaborate.

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**B.C.A. (CBCS) RUSA II Semester  
Examination**

**3771**

**DATA STRUCTURES**

Paper : BCA-0204

**Time : 3 Hours]**

**[Maximum Marks : 70**

*Note* :- Part-A is compulsory. Candidates need to attempt  
*one* question each from Parts B, C, D and E.

**Part-A**

**(Compulsory Question)**

I. Answer the following questions :

(i) Pushing an element into stack already having  
five elements and stack size of 5, then stack  
becomes .....

- (a) Overflow                      ~~(b) Crash~~  
(c) Underflow                    (d) User flow

(ii) What is the value of the postfix expression  
 $6\ 3\ 2\ 4\ +\ -\ * \ ?$

- (a) 1  
(b) 40  
(c) 74  
(d) -18

(iii) How many children does a binary tree have ?

- (a) 2  
(b) any number of children  
(c) 0 or 1 or 2  
(d) 0 or 1

(iv) Which of the following is a linear data  
structure ?

- (a) Array  
(b) AVL Trees  
(c) Binary Trees  
(d) Graphs

**CH-571**

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**CH-571**

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(v) Which of the following data structures finds its use in recursion ?

- (a) Stack
- (b) Arrays
- (c) Linked List
- (d) Queues

(vi) The insertion and deletion from a stack takes place only from the TOP (True/False) ✓

(vii) Best case complexity of the bubble sort algorithm is .....

(viii) Which one of the following is not the type of the queue ?

- (a) Linear queue
- (b) Circular queue
- (c) Double ended queue
- (d) Single ended queue

1×10=10

(ix) A full binary tree with  $n$  leaves contains :

- (a)  $n$  nodes
- (b)  $\log_2 n$  nodes
- (c)  $2n - 1$  nodes ✓
- (d)  $2^n$  nodes

(x) A tree can be drawn if it is in preorder and ..... traversal is given. 1×10=10

2. Answer the following questions in brief :

- (i) Explain time-space tradeoff of an algorithm. ✓
- (ii) Evaluate below postfix expression :

$$2\ 3\ 2\ \wedge\ \wedge\ 8\ 2\ 1\ 1\ 5\ 2\ * \ 6\ - \ +$$

- (iii) What are the advantages of circular linked list ? ✓
- (iv) Distinguish between linear and binary search ✓

(v) Distinguish between tree and binary tree. 4×5=20 ✓



**Part-B**

10 each

What is data structure ? Write a brief note on classification of data structure. Explain its types.

*Or*

4. Explain the insertion and deletion operations performed on array in detail.

**Part-C**

10 each

5. What is linked list ? How is it represented in memory ? Briefly explain header linked list.

*Or*

6. Write an algorithm that delete the first element of a linked list and add an element at the end of linked list.

**Part-D**

10 each

7. Define stack. Explain various applications performed on stack.

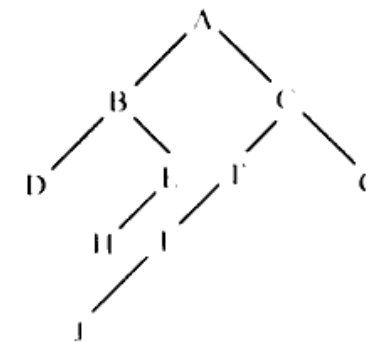
*Or*

8. Define queue. Write an algorithm to insert an element in queue.

**Part-E**

10 each

9. Write a brief note of Traversing a binary tree. Find the preorder, inorder and postorder traversal of the following tree :



*Or*

10. Explain linear search. Write an algorithm to perform linear search. Also explain its disadvantages.

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**B.C.A. (CBCS) RUSA IInd Semester  
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**3770**

**DIGITAL ELECTRONICS**

Paper : BCA-0203

**Time : 3 Hours]**

**[Maximum Marks : 70**

**Note :-** (Unit-I) is compulsory. Attempt *four* questions  
choosing *one* question from each Unit.

**Unit-I**

**(Compulsory Question)**

- 1. (i) Impurity is added in intrinsic semiconductor for making semi conductor devices. (True/ False)
- (ii) The principle cause of propagation delay in a *pn* junction is removal of carriers.

**CH-570**

( 1 )

Turn Over

- (iii) The don't care condition could be simply used in order to simplify the Boolean expression in .....
  - (a) Latches
  - (b) K maps
  - (c) registers
- (iv) CMOS technology is used in .....
  - (a) microprocessor
  - (b) digital logic
  - (c) Both of these
- (v) TTL digital circuit possess ..... due to its multi emitter transistor.
  - (a) Low induction
  - (b) High capacitance
  - (c) Low capacitance
- (vi) The group of 1's in 4 cells of k-map is called :
  - (a) pair
  - (b) quad
  - (c) octet
- (vii) In JK flip flop, the function  $J = K$  is used to realize .....
  - (a) SR flip flop
  - (b) T flip flop
  - (c) D flip flop

**CH-570**

( 2 )

(viii) If there are  $2^m$  input lines then it requires ..... select lines.

- (a) 2
- (b) n
- (c) m

(ix) A digital circuit that can store only one bit of information is called .....

- (a) Register
- (b) Flip flop
- (c) XOR gate

(x) Which of the logic unit is the fastest of the following logic families ?

- (a) ECL
- (b) TTL
- (c) CMOS

1×10=10

2. Short answer questions :

- (i) What is a multiplexer ?
- (ii) What are semiconductors ?
- (iii) Explain race around condition.
- (iv) Describe the characteristics of digital integrated circuit.
- (v) Explain de Morgan's Law with example. 4×5=20

CH-570

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Turn Over

**Unit-II**

10 each

3. Explain *pn* junction diode. Also explain a forward biased and reverse biased diode.

4. Explain the transistor-transistor logic (TTL) in detail.

**Unit-III**

10 each

5. (a) Prove that :

$$A'BC + AB'C + ABC' + ABC = AB + BC + CA$$

(b) Simplify :

$$f = (A + C)(AD + AD') + AC + C$$

6. What are logic gates ? Describe the truth table and symbol of the following logic gates.

- (a) NAND
- (b) OR
- (c) XOR

**Unit-IV**

10 each

7. Explain different techniques of minimization with a suitable example.

8.  $F(w, x, y, z) = \sum m(0, 1, 2, 6, 8, 9, 10, 11) + \sum d(3, 7, 14, 15)$  is a set of Boolean function, where *m* represents min terms and *d* represents don't care. Find the minimal SOP expression for F.

**Unit-V**

10 each

9. Draw the truth table and logic diagram of full adder.

10. What is master slave JK flip flop ? Draw its logic symbol and circuit diagram.

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**BCA (CBCS) RUSA IInd Semester  
Examination**

**3768**

**MATHEMATICS-II**

Paper : BCA-0201

**Time : 3 Hours]**

**[Maximum Marks : 70**

**Note :-** Attempt *one* question from each Unit. Q. No. 9 is compulsory.

**Unit-I**

1. (a) Verify Cauchy's Mean Value Theorem for the functions

$$f(x) = \log x \text{ and } g(x) = \frac{1}{x}$$

in the interval  $[1, e]$ .

- (b) State and prove Lagrange's Mean Value Theorem. 5,5

**CH-568**

( 1 )

Turn Over

2. (a) If  $y = (\sin^{-1} x)^2$ , find  $y_n(0)$ .  
(b) If  $p^2 = a^2 \cos^2 \theta + b^2 \sin^2 \theta$ , prove that :

$$p + \frac{d^2 p}{d\theta^2} = \frac{a^2 b^2}{p^3} \quad 5,5$$

**Unit-II**

3. (a) Show that for any two integers  $a$  and  $b$ , with  $a > 0$ , there exist unique integers  $q$  and  $r$  such that  $b = aq + r$ ,  $0 \leq r < |a|$ .  
(b) If  $a$  and  $b$  are relatively prime integers, then any common divisor of  $ac$  and  $b$  is a divisor of  $c$ . 5,5
4. (a) Solve  $2x + 7y \equiv 5 \pmod{12}$   
(b) Find the g.c.d. of 275 and 200 and express it in the form  $275x + 200y$ . 5,5

**Unit-III**

5. (a) Let  $Q^*$  denotes the set of all relational numbers except 1, then show that  $Q^*$  forms an infinite abelian group under the operation 'o' defined by  $a o b = a + b - ab \forall a, b \in Q^*$ .  
(b) If in a group  $G$ ,  $a^5 = e$  and  $aba^{-1} = b^2$  for all  $a, b \in G$ . Prove that if  $b \neq e$ , then  $b^{31} = e$ . 5,5

**CH-568**

( 2 )

6. (a) Show that the multiplicative group  $\{1, -1, i, -i\}$  formed by the fourth roots of unity is a cyclic group.

(b) If  $G$  is a group under the binary operation  $*$  and  $a, b$  are elements of  $G$ , then prove that :

$$(a * b)^{-1} = b^{-1} * a^{-1} \quad \forall a, b \in G. \quad 5,5$$

#### Unit-IV

7. (a) If  $R$  is a ring with identity such that :

$$(xy)^2 = x^2y^2 \quad \forall x, y \in R$$

then show that  $R$  is a commutative ring.

(b) Let  $R$  be the set of all reals :

$$\text{Take } F = \left\{ \begin{bmatrix} a & b \\ -b & a \end{bmatrix} : a, b \in \mathbf{R} \right\}$$

Then prove that  $(F, +, \cdot)$  is a field. 5,5

8. (a) Prove that the set  $G = \{a + \sqrt{2}b \mid a, b \in \mathbf{Q}\}$  where  $\mathbf{Q}$  is the set of rationals, is a ring.

(b) Give an example of a division ring which is not a field. 5,5

**CH-568**

( 3 )

Turn Over

#### Unit-V

#### (Compulsory Question)

9. (i) State Cauchy's mean value theorem.

(ii) If  $y = e^{ax} \cos (bx + c)$  then  $y'' \in \dots\dots\dots$

(iii) State Leibnitz's theorem.

(iv)  $8^n - 3^n$  is not divisible by 5.  (True/False)

(v) Find g.c.d. (121, 550, 770).

(vi) Find the remainder when  $2^{340}$  is divided by 341.

(vii) Does the set of positive irrational numbers form a group under multiplication ?  (Yes/No)

(viii) If  $(ab)^2 = a^2b^2, \forall a, b \in G$ , where  $G$  is a group, then show that  $G$  must be an abelian group.

(ix) Every cyclic group is abelian.  (True/False)

(x) Identify which one from the following is not a field : 3×10=30

$(\mathbf{N}, +, \cdot), (\mathbf{Q}, +, \cdot)$  and  $(\mathbf{C}, +, \cdot)$

**CH-568**

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**BCA (CBCS) RUSA IIIrd Semester  
Examination**

**3564**

**COMPUTER ORGANIZATION**

Paper : BCA-0303

**Time : 3 Hours]**

**[Maximum Marks : 70**

*Note :- Part A is compulsory. Attempt one question each  
from Parts-B, C, D and E.*

**Part-A**

**(Compulsory Question)**

1. (i) Which of the following computer memory is fastest ?
- (a) Register
  - (b) Hard disk
  - (c) RAM
  - (d) None of these

**C-709**

( 1 )

Turn Over

- (ii) Which of the following operations is performed by ALU ?
- (a) Data Manipulation
  - (b) Exponential
  - (c) Square Root
  - (d) All of these
- (iii) Which of the following memory unit communicates directly with the CPU ?
- (a) Auxiliary memory
  - (b) Main memory
  - (c) Secondary memory
  - (d) None of these
- (iv) The collection of 8-bits is called as :
- (a) Byte
  - (b) Nibble
  - (c) Word
  - (d) Record
- (v) ASCII stands for .....
- (vi) Decimal equivalent of  $(101101)_2$  is .....
- (vii) Which gate is known as universal gate ?
- (a) OR
  - (b) AND
  - (c) NAND
  - (d) None of these

**C-709**

( 2 )

- (viii) Program counter holds the address of data which is to be executed next. (True/False)
- (ix) LIFO is stack organization. (True/False)
- (x)  $1011 - 1001 - 1001 = -0011$ . (True/False)  $1 \times 10 = 10$

2. Short Answer Questions (25–40 words) :

- (i) Write a short note on hamming code.
- (ii) Convert  $121_{16}$  to decimal number.
- (iii) Define micro-operations.
- (iv) Explain two address-instructions.
- (v) Evaluate program interrupt.  $5 \times 4 = 20$

**Part-B**

**(Unit-I)**

3. Define hamming code. Explain how it is used for error selection with example. 10

*Or*

4. (i) Explain how a floating point binary number is represented in mantissa and exponent for ?

(ii) Convert the following decimal number to hexadecimal number.

- (a)  $716_{10}$       (b)  $289_{10}$       (c)  $387_{10}$        $4+6=10$

**C-709**

( 3 )

Turn Over

**Part-C**

**(Unit-II)**

5. (i) Define registers. Explain how register transfer of information take place.
- (ii) Explain micro-operations in detail.  $5+5=10$

*Or*

6. Explain 3-bit binary address in detail. 10

**Part-D**

**(Unit-III)**

7. Explain the concept of indirect address. Explain the stored program organization of computer. 10

*Or*

8. Explain instruction format. Define timing and control of registers. 10

**Part-E**

**(Unit-IV)**

9. Define instruction format. Explain three address instructions in detail. 10

*Or*

10. Define program interrupt. Explain various types of interrupts. 10

**C-709**

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**BCA (CBCS) RUSA IIIrd Semester  
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**3562**

**MATHEMATICS-III**

Paper : BCA-0301

**Time : 3 Hours]**

**[Maximum Marks : 70**

*Note :-* Part-A is compulsory and is of 30 marks and attempt one question each from Parts-B, C, D and E. Marks are indicated with each questions in each parts.

**Part-A**

1. (A) (i) For the given differential equation :

$$\frac{d^2y}{dx^2} + \left(\frac{dy}{dx}\right)^3 + 2y = 0$$

order is = ..... and degree is .....

(ii) The general solution of differential equation involves as many arbitrary constants as the order of differential equation.

(True/False)

**C-707**

( 1 )

Turn Over

(iii) The product of three cube roots of unity is one. (True/False)

(iv) Express  $(5 - 3i)^2$  in the form  $(a + ib)$ .

(v) 2 is smallest even prime number.

(True/False)

(vi) Evaluate  $X(1 + w - w^2)^6$ .

(vii) Define relative prime integers.

(viii) Write conjugate of  $(3 + i)$ .

(ix)  $\text{cis } \theta_1, \text{cis } \theta_2 \text{cis } \theta_3 = \dots\dots\dots$

(x) Find the modulus of  $(1 + \sqrt{3}i)$ .  $1 \times 10 = 10$

(B) (i) Solve :

$$\frac{d^2y}{dx^2} - 7\frac{dy}{dx} + 6y = e^{2x}$$

(ii) Explain the rule to solve Cauchy's linear differential equation.

(iii) Find real  $\theta$ , such that

$$\frac{3 + 2i \sin \theta}{1 - 2i \sin \theta}$$

is purely real.

(iv) Prove that :

$$\left(\frac{\cos \theta + i \sin \theta}{\sin \theta + i \cos \theta}\right) = \cos 8\theta + i \sin 8\theta$$

(v) Check, whether 2093 is prime or not?  $4 \times 5 = 20$

**C-707**

( 2 )

**Part-B**

10 each

2. (a) Form the differential equation representing the family of curves  $y = a \cos(x + b)$ , where  $a$  and  $b$  are constants.

(b) Solve :

$$\frac{d^2y}{dx^2} - 5\frac{dy}{dx} + 6y = xe^{4x}$$

3. (a) Solve the differential equation :

$$x^2 \frac{d^2y}{dx^2} + x \frac{dy}{dx} - y = x^2 e^x$$

(b) Solve :

$$(1+2x)^2 \frac{d^2y}{dx^2} - 6(1+2x) \frac{dy}{dx} + 16y = 8(1+2x)^2$$

**Part-C**

10 each

4. (a) If  $Z_1$  and  $Z_2$  be two complex number, then prove that : <https://www.hpboardonline.com>

$$\begin{aligned} (Z_1 + Z_2)^2 + (Z_1 - Z_2)^2 \\ = 2[|Z_1|^2 + |Z_2|^2] \end{aligned}$$

- (b) Find the modulus and argument of the complex number  $\frac{1+2i}{1-3i}$ , then convert it into polarform.

5. (a) Find the square root of  $24 - 10i$ .

- (b) If the complex number  $Z_1, Z_2, Z_3$  be the vertices of an equilateral triangle in complex plane, then prove that :

$$Z_1^2 + Z_2^2 + Z_3^2 = Z_1Z_2 + Z_2Z_3 + Z_3Z_1$$

**C-707**

( 3 )

Turn Over

**Part-D**

10 each

6. (a) Find the solution to system of simultaneous equations :

$$x \equiv 2 \pmod{3}, x \equiv 3 \pmod{5}, x \equiv 5 \pmod{2}$$

- (b) Explain the following :

- (i) Primes  
(ii) Quadratic congruences

7. (a) Solve the congruence :

$$5x^2 + 6x + 1 \equiv 0 \pmod{23}$$

- (b) Find the prime between 1 and 100 by using sieve of Eratosthenes.

**Part-E**

10 each

8. (a) Show that  $(Z_5, t_5, X_5)$  is a finite field.

- (b) Explain the following :

- (i) Finite field over reals  
(ii) Substraction of polynomial over  $GF(2)$

9. (a) Write down the composition table for :

- (i)  $GF(2)$  and  
(ii)  $GF(2^2)$

- (b) Multiply the polynomial  $(x^6 + x^3 + x^2)$  by  $(x^5 + x^4 + 1)$  in  $GF(2^6)$  with irreducible polynomial  $(x^4 + x + 1)$ .

**C-707**

( 4 )

Roll No. ....

Total No. of Questions : 9]  
(2034)

[Total No. of Printed Pages : 4

**BCA (CBCS) RUSA IVth Semester  
Examination**

**3776**

**INTERNET TECHNOLOGY AND  
WEB PAGE DESIGN**

Paper : BCA-0404

Time : 3 Hours]

[Maximum Marks : 70

*Note* :- Attempt *five* questions in all. Attempt *one* question each from Units-I, II, III and IV. Q. No. 1 (Part-A) is compulsory.

**Part-A**

**(Compulsory Question)**

1. (A) Attempt all parts. Answer the following MCQ's by selecting the most appropriate option :

(i) IPv6 addresses have a size of :

(a) 32 Bits

(b) 64 Bits

(c) 128 Bits

(d) 256 Bits

(ii) In this topology there is a central controller or hub :

(a) Star

(b) Mesh

(c) Ring

(d) Bus

(iii) In order to upload a HTML file to a web server, which protocol is used ?

(a) HTTP

(b) SMTP

(c) TCP

(d) FTP

(iv) Which of the following type of HTML tag is used to define an internal style sheet ?

(a) <script>

(b) <link>

(c) <class>

(d) <style>

Fill in the blank spaces :

(v) ..... is a stateless protocol

(vi) ..... is physical address of computer.

(vii) URL stands for .....

**CH-576**

( 1 )

Turn Over

<https://www.hpboardonline.com>

**CH-576**

( 2 )

<https://www.hpboardonline.com>

(viii) HTML tag for creating a line break is

(ix) ..... is used to identify computer in network.

State whether the statement is True or False :

(x) Internet Service Provider provides services for web hosting. (True or False)

(B) Answer the following in **25 to 50** words :  $1 \times 10 = 10$

(i) Discuss the working of a Search Engine.

(ii) What do you mean by FTP ? Why is it used ?

(iii) Write a short note on DNS.

(iv) Define anchor tag with an example.

(v) Define XML. What are the advantages of XML ?  $4 \times 5 = 20$

### Part-B (Unit-I)

2. (a) What is Internet ? Discuss its applications.
- (b) What are the requirements for setting up a Network ?  $5,5$
3. (a) What are the features of Internet ? Discuss in detail.
- (b) What is electronic Mail ? Discuss how it works ?  $5,5$

### Part-C (Unit-II)

4. (a) What is a World Wide Web Server ? Name any three www servers.
- (b) Write a short note on Dial up SLIP.  $5,5$
5. Write short notes on the following :
  - (i) ISDN
  - (ii) IP Addressing
  - (iii) DNS Servers  $3,4,3$

### Part-D (Unit-III)

6. (a) Explain the structure of the HTML webpage with an example.
- (b) Define List Tag with the help of an example.  $6,4$
7. (a) Define Table tag and their attributes by giving a suitable example. <https://www.hpboardonline.com>
- (b) What is an Image Map ? Give an example to show the use of image maps.  $5,5$

### Part-E (Unit-IV)

8. Discuss the process of formatting a site with Cascading Style Sheets by providing a suitable example.  $10$
9. (a) Explain the use of <DIV> and <SPAN> tags in CSS.
- (b) Write a short note on Linking in XML.  $5,5$

**B.C.A. (CBCS) RUSA IVth Semester  
Examination****3777****PROGRAMMING IN VISUAL BASIC**

Paper : BCA-0405

Time : 3 Hours]

[Maximum Marks : 70

Note :- Unit-I is compulsory. Selecting *one* question from each Unit.

**Unit-I****(Compulsory Question)**

1. (i) In ..... window we can write code.
- (a) Immediate window  
(b) Local window  
(c) Code editor window
- (ii) The form module has file extension.
- (a) .frb  
(b) .frm  
(c) .vb

- (iii) ..... control is used to provide an identifiable grouping for other controls.
- (a) Frame  
(b) Label Box  
(c) Combo Box
- (iv) ..... is a block of code that is executed in response to an event.
- (a) Function  
(b) Sub Procedure  
(c) Property Procedure
- (v) ..... is a method which moves the focus to the specified control or form.
- (a) Set Focus  
(b) Lost Focus  
(c) Get Focus
- (vi) ..... is the process of finding and removing errors.
- (a) Check  
(b) Debugging  
(c) Break
- (vii) In visual basic, arguments are passed by default by :
- (a) Reference  
(b) value  
(c) Object

(viii) The value of local variable can be preserved by making the variable as :

- (a) Private
- (b) Implicit
- (c) Static

(ix) ..... function is used to return a copy of a string without leading spaces.

- (a) Ltrim
- (b) Rtrim
- (c) Trim

(x) The function procedure are ..... by default.

- (a) Protected
- (b) Public
- (c) Private

1×10=10

2. Short answer questions :

- (i) How do you create an executable file in visual basic ?
- (ii) Explain in brief about accessing a child form.
- (iii) Write a procedure to create dialog box.
- (iv) What does option explicit mean ?
- (v) Explain the msgbox() function.

4×5=20

**CH-577**

( 3 )

Turn Over

**Unit-II**

10 each

- 3. What is a form ? How do we create a form and manage at runtime ? Also discuss some common form properties.
- 4. What is Visual Studio ? Discuss its elements in detail.

**Unit-III**

10 each

- 5. Explain the different loop statements in Visual Basic.
- 6. What do you mean by a variable ? Project the scope of a variable with a suitable example.

**Unit-IV**

10 each

- 7. Give a brief idea about event driven programming. Explain the use of code editor to start an event handler. Discuss adding and removing event.
- 8. What is exception ? How does exception handling work ? Create an application with exception handling.

**Unit-V**

10 each

- 9. How to create a date time value with a particular format ? Write the procedure to validate a string entered by the user.
- 10. Write the procedure to create a form and display the form as a dialog box. Explain with example how Item Data property is different from List Index property of a combo box.

**CH-577**

( 4 )

Roll No. ....

Total No. of Questions : 10] [Total No. of Printed Pages : 4  
(2034)

**B.C.A. (CBCS) RUSA IVth Semester  
Examination**

**3777**

**PROGRAMMING IN VISUAL BASIC**

Paper : BCA-0405

Time : 3 Hours]

[Maximum Marks : 70

Note :- Unit-I is compulsory. Selecting *one* question from each Unit.

**Unit-I**

**(Compulsory Question)**

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- (a) Immediate window
  - (b) Local window
  - (c) Code editor window
- (ii) The form module has file extension.
- (a) .frb
  - (b) .frm
  - (c) .vb

- (iii) ..... control is used to provide an identifiable grouping for other controls.
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  - (b) Debugging
  - (c) Break
- (vii) In visual basic, arguments are passed by default by :
- (a) Reference
  - (b) value
  - (c) Object

**CH-577**

( 1 )

Turn Over

**CH-577**

( 2 )

(viii) The value of local variable can be preserved by making the variable as :

- (a) Private
- (b) Implicit
- (c) Static

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- (a) Ltrim
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- (b) Public
- (c) Private

1×10=10

2. Short answer questions :

- (i) How do you create an executable file in visual basic ?
- (ii) Explain in brief about accessing a child form.
- (iii) Write a procedure to create dialog box.
- (iv) What does option explicit mean ?
- (v) Explain the msgbox() function.

4×5=20

**CH-577**

( 3 )

Turn Over

**Unit-II**

10 each

- 3. What is a form ? How do we create a form and manage at runtime ? Also discuss some common form properties.
- 4. What is Visual Studio ? Discuss its elements in detail.

**Unit-III**

10 each

- 5. Explain the different loop statements in Visual Basic.
- 6. What do you mean by a variable ? Project the scope of a variable with a suitable example.

**Unit-IV**

10 each

- 7. Give a brief idea about event driven programming. Explain the use of code editor to start an event handler. Discuss adding and removing event.
- 8. What is exception ? How does exception handling work ? Create an application with exception handling.

**Unit-V**

10 each

- 9. How to create a date time value with a particular format ? Write the procedure to validate a string entered by the user.
- 10. Write the procedure to create a form and display the form as a dialog box. Explain with example how Item Data property is different from List Index property of a combo box.

**CH-577**

( 4 )



Roll No. ....

Total No. of Questions : 9] [Total No. of Printed Pages : 4  
(2104)

**BCA (CBCS) RUSA Vth Semester  
Examination**

**4105**

**ASP.NET TECHNOLOGIES**

Paper : BCA-0504

[Time : 3 Hours]

[Maximum Marks : 70]

**Note** :- Attempt five questions in all, selecting one question from each Parts-B, C, D and E. Question No. 1 (Part-A) is compulsory.

**Part-A**

**(Compulsory Question)**

1. (A) Do as directed (MCQ/True/False/Fill in the blanks) :

(i) Master pages are used to provide the code and appearance that are the same for a series of .....

(ii) Can you use ASPX pages in MVC ?

(iii) Cookies is not an ASP.NET page event. (Y/N)

CS-32

( 1 )

Turn Over

(iv) In ASP.NET application DLL files are stored in bin folder.

(v) In a SQL Statement while working with Sql command it returns a single value, at that time ..... method of command object will be used.

(vi) ViewState is not an ASP component.

(vii) ViewState is the DataType return in IsPostBack property. What happens in the init event of a page ?

(viii) Which validation control in ASP.NET can be used to determine if data that is entered into a TextBox control is of type Currency ?

(a) ValidationSummary

(b) CompareValidator

(c) RequiredFieldValidator

(d) None of these

(ix) What are the types of cookies ?

(a) Session cookies

(b) Persistent cookies

(c) Dummy cookies

(d) Option (a) and (b) are correct

CS-32

( 2 )

(A) Which of the following session mode serialization is not required to store the data ?

- (a) InProc
- (b) SQL Server
- (c) State Server
- (d) None of these

[1×10=10]

(B) Attempt all of the following in 25 to 30 words each :

- (i) What is a delegate in .NET ?
- (ii) What are some of the common components of .NET ?
- (iii) What does CLR stand for in .NET ?
- (iv) Write code to send e-mail from an ASP.NET application.
- (v) What is the difference between ASP.NET Web API and WCF ?

[4×5=20]

### Part-B

2. Describe various features of .NET Framework in detail. [10]

3. (i) What is the security support, error handling and garbage collection provided by ASP.NET ?

(ii) What is common language specification ? [6.4]

CS-32

( 3 )

Turn Over

### Part-C

4. (i) Create a console application to enter name and valid age of 10 voters along with their valid Aadhar No. (10 digits) and print the whole data.

(ii) Explain constant variables or symbols in VB.NET. [7.3]

5. (i) Discuss various flow control statements in ASP.NET.

(ii) Differentiate between camel notation and Pascal notation. [7.3]

### Part-D

6. (i) Write a detailed note Web form event handling.

(ii) Discuss various HTML general controls in detail. [5.5]

7. (i) Differentiate between HTML input radio button and HTML input Checkbox Radio Control.

(ii) What are various .NET page life cycle events ? Give example. <https://www.hpboardonline.com> [5.5]

### Part-E

8. Discuss various validation controls in detail. [10]

9. (i) How can you create and use a user control and custom control ?

(ii) What are the various steps of authorizing a custom server control ? [5.5]

CS-32

( 4 )

Roll No. ....

Total No. of Questions : 9]  
(2104)

[Total No. of Printed Pages : 7

**BCA (CBCS) RUSA Vth Semester  
Examination**

**4103**

**E-COMMERCE**

Paper : BCA-0502

**Time : 3 Hours]**

**[Maximum Marks : 70**

**Note** :- Attempt *five* questions in all, selecting *one* question each from Unit-I, II, III and IV. Question No. 1 (Part-A) is compulsory.

**Part-A**

[10×1=10]

**(Compulsory Question)**

1. (A) Attempt all parts. Select the correct option :

- (i) ..... is not a major type of electronic commerce.
- (a). Consumer to Business
  - (b). Business to Consumer
  - (c). Business to Business
  - (d). Consumer to Consumer

(ii) Which E-Commerce model involves the sale of goods or services from businesses to the general public ?

- (a) Business to Government
- (b) Business to Consumer
- (c) Business to Business
- (d) Consumer to Business

(iii) ..... is/are function(s) of E-Commerce.

- (a) Marketing
- (b) Supply Chain
- (c) Finance
- (d) All of these

**CS-30**

( 1 )

Turn Over

**CS-30**

( 2 )

(iv) This E-Commerce commercial enterprise model specifically specializes in selling services or products online :

- (a) Indirect Marketing
- (b) Online Direct Marketing
- (c) Brick and Mortar
- (d) Marketplace

(v) Which is a function of E-Commerce ?

- (a) Marketing
- (b) Advertising
- (c) Warehousing
- (d) All of these

(vi) ..... is essentially a business process that connects manufacturers, retailers, customers and suppliers in the form of a chain to develop and deliver products.

- (a) E-commerce
- (b) EDI
- (c) Networking
- (d) SCM

(vii) ..... is a class of advertising methods which are considered unethical and may even be illegal.

- (a) Advertorials
- (b) Pop-up ads
- (c) Spam e-mail
- (d) Malware

Fill in the blank spaces with appropriate words :

(viii) ..... is a financial instrument which can be used more than once to borrow money or buy products and services on credit.

(ix) ..... is basically a secure gate between our organization data and internet.

(x) ..... encrypts payment card transaction data and verifies that both parties in the transaction are genuine.

(B) Answer the following in 25 to 40 words :  $5 \times 4 = 20$

- (i) Discuss the growth and development of E-Commerce in India.
- (ii) Differentiate between traditional marketing from e-marketing.
- (iii) Write a short note on Search Engine Optimization.
- (iv) What are the risks associated with electronic payment systems ?
- (v) What are the components of e-CRM ?

### Part-B

#### Unit-I

2. (a) Discuss the Anatomy of E-Commerce. [5]  
(b) Elaborate the impact of E-Commerce in India. [5]
3. (a) Discuss the E-Commerce Consumer and Organization Applications. [5]  
(b) Write a short note on prospects E-Commerce in India. [5]

CS-30

( 5 )

Turn Over

### Part-C

#### Unit-II

4. Discuss in detail about advertising and marketing on the Internet. [10]
5. (a) Describe various tools used for internet marketing. [5]  
(b) List out some weakness of Internet advertising. [5]

### Part-D

#### Unit-III

6. Discuss various types of Electronic Payment Systems in detail. Also explain their benefits to the users and the merchants. [10]
7. What do you mean by EDI ? What are the components of Electronic Data Interchange ? Also discuss its advantages in Business. [10]

CS-30

( 6 )

**Part-E**

**Unit-IV**

8. How will you secure a Business over the Internet ?

Discuss the security policy, procedures and practices to secure a Business over the Internet. [10]

9. (a) Define customer relationship management. [5]

(b) Discuss the CRM utility in India. [5]

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Total No. of Questions : 9]  
(2104)

[Total No. of Printed Pages : 7

**BCA (CBCS) RUSA Vth Semester  
Examination**

**4102**

**OPERATING SYSTEM**

Paper : BCA-0501

**Time : 3 Hours]**

**[Maximum Marks : 70**

*Note :-* (i) Question No. 1 (Part A) is compulsory. Attempt *four* questions choosing one question, each from Part-B, Part-C, Part-D and Part-E.

(ii) Figures at the right indicate marks.

**Part-A**

**(Compulsory Question)**

1. (A) Select the correct alternative :

(i) Multiprocessor environment of the computer system uses :

(a) parallel resources

(b) dedicated resources

(c) shared resources

(d) distributed resources

(ii) A system generated interrupt caused by an error during program execution is called :

(a) a trap

(b) a program

(c) a process

(d) a malware

(iii) Privileged mode of the operating system is a :

(a) User mode

(b) Kernel mode

(c) System mode

(d) Application mode

**CS-29**

( 1 )

Turn Over

**CS-29**

( 2 )

(iv) No preemption means that a resource is released as :

- (a) Terminated
- (b) Non-voluntarily
- (c) Voluntarily
- (d) None of these

(v) The information of a process is stored in a data structure called :

- (a) Process control block
- (b) Data blocks
- (c) Process flow block
- (d) Process Access block

(vi) When a process is loaded into the memory it is called as :

- (a) Procedure
- (b) Process
- (c) Register
- (d) Table

(vii) Moving process from main memory to disk is called :

- (a) Scheduling
- (b) Caching
- (c) Swapping
- (d) Spooling

(viii) Physical memory is broken into fixed-sized blocks called :

- (a) frames
- (b) backing store
- (c) pages
- (d) None of these



(ix) Which of the following memory allocation scheme suffers from external fragmentation ?

- (a) Segmentation
- (b) Pure Demand Paging
- (c) Swapping
- (d) Paging

(x) A process is thrashing if :

- (a) it spends more time paging than executing
- (b) it spends less time paging than executing
- (c) page fault occurs
- (d) swapping cannot take place [1×10=10]

(B) Explain the following (in 25 to 50 Words) :

- (i) Write necessary conditions for deadlock.
- (ii) Differentiate between segmentation and paging.
- (iii) Explain the elements of PCB.
- (iv) What are the different stages in the life of a process ?
- (v) What is the importance of memory management in an operating system ? [4×5=20]

CS-29

( 5 )

Turn Over

Part-B

(Unit-I)

10 each

- 2. Explain any *three* types of operating systems.
- 3. What is an operating system ? Discuss the services provided by an operating system.

Part-C

(Unit-II)

10 each

- 4. Why process scheduling is required ? Discuss the features and types of scheduling algorithms available.
- 5. Define deadlock with example. Explain deadlock prevention and detection techniques. <https://www.hpboardonline.com>

Part-D

(Unit-III)

10 each

- 6. What is virtual memory ? Discuss the process of address translation in case of virtual memory.
- 7. Discuss various memory management schemes in detail. Also discuss the physical and logical address space.

CS-29

( 6 )

**Part-E**

**(Unit-IV)**

10 each

8. Discuss contiguous, linked and indexed methods of file allocation in detail.
9. What is directory structure ? Explain single-level, two-level, structure directory with their advantages and disadvantages.

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