Exam. Code : 107202
Subject Code : 1734

Bachelor of Computer Application (BCA) 2nd Semester

PRINCIPLES OF DIGITAL ELECTRONICS

Paper—II

Time Allowed—Three Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section.

SECTION—A

1. Perform the following number conversions :—

   (i) $(3FEF)_{16} = (?)_{10}$

   (ii) $(F432)_{16} = (?)_{2}$

   (iii) $(65)_{8} = (?)_{2}$

   (iv) $(56)_{10} = (?)_{2}$

   (v) $(B3D8)_{16} = (?)_{8}$

   (vi) $(1011.101)_{2} = (?)_{16}$

   (vii) $(AB.CD)_{16} = (?)_{10}$

   (viii) $(72.22)_{8} = (?)_{16}$ 15

2. Using 2's complement notation perform the following arithmetic operations using 8 bit register(s) :

   (i) 25 + (–12)

   (ii) 17 – 6

   (iii) –18 – 16

   (iv) –8 + (18)

   (v) 12 – (–19). 15

SECTION—B

3. Verify the following gate with truth table :

   (i) AND

   (ii) OR

   (iii) NOT

   (iv) NAND

   (v) NOR

   (vi) XOR

   (vii) XNOR. 15

4. Simplify F together with don't care conditions d in (i) SOP (ii) POS form :

   $F(w, x, y, z) = \Sigma(1, 2, 8, 9, 12, 13)$,

   $d(w, x, y, z) = \Sigma(10, 11, 14, 15)$. 15

SECTION—C

5. (a) Design a 3 : 8 decoder using basic gates. 7.5

   (b) Explain the function of a full adder with a truth table, logic circuit and block diagram. 7.5

6. (a) Explain the functioning of Multiplexer and Demultiplexer in detail. 7.5

(b) Draw the circuit of an S-R Flip Flop using NAND gates only. From it derive the circuit of a D-Flip Flop and explain its truth table. 7.5

SECTION—D

7. (a) Compare static RAMs and dynamic RAMs. 7.5

(b) Discuss the classification of ROM and RAM memories. 7.5

8. (a) Explain read and write operation of memory with timing waveforms. 7.5

(b) Explain PROM and EPROM address selection logic. 7.5

Exam. Code : 107202
Subject Code : 7081

Bachelor of Computer Application (BCA) 2nd Semester
(Old Syllabus of 2017)
INTRODUCTION TO PROGRAMMING (C)-II
Paper—I

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt any **five** questions. All questions carry equal marks.

1. (a) Explain the concept of string manipulation with an example.

   (b) What is meant by a function call ? From what parts of a program can a function be called ?

2. (a) What is the purpose of a static variable in a single-file program ? What is its scope ?

   (b) What is the purpose of an automatic variable ? Does an automatic variable retain its value once control is transferred out of its defining function ?

3. (a) What is the scope of a static external variable ?

   (b) Under what circumstances can an external variable be defined to be static ? What advantage might there be in doing this ?

4. (a) How is the size of the dynamic memory block specified ? What kind of information is returned by the library function ?

   (b) Under what conditions can the elements of a multidimensional array be initialized if the array is defined in terms of an array of pointers ?

5. (a) In what way can the assignment of an initial value be included in the declaration of a pointer variable ?

   (b) What is the relationship between an array name and a pointer ? How is an array name interpreted when it appears as an argument to a function ?

6. (a) What is a structure member ? What is the relationship between a structure member and a structure ?

   (b) How is a structure-type pointer variable declared ? To what does this type of variable point ?

7. (a) What is a Union ? How does a union differ from a structure ?

   (b) What is meant by opening a data file ? How is this accomplished ?

8. (a) What is the purpose of the fclose function ? Is it necessary that a call to this function appear within a program that utilizes a data file ?

   (b) Describe two different approaches to updating a data file. Which approach is better and why ?

Exam. Code : 107202
Subject Code : 1736

Bachelor of Computer Application (BCA)

2nd Semester

COMMUNICATION SKILLS IN ENGLISH–II

Paper—V

Time Allowed—3 Hours] [Maximum Marks—35

Note :— All questions carry equal marks. Attempt **ONE** question from each section, **fifth** question can be attempted from any section.

SECTION—A

1. Write a note on the process of listening. 7
2. Discuss the barriers to effective communication. 7

SECTION—B

3. Discuss the problems faced in telephonic conversation. 7
4. You are the head boy of the college, address your council regarding the meeting you attended. 7

SECTION—C

5. "Cleanliness is next to godliness". Do you agree or disagree ? 7
6. How can speech be made effective ? 7

SECTION—D

7. Write detailed note on sounds of English. 7

8. Mark stress on following :

   (i) doctor

   (ii) egg

   (iii) consent (u)

   (iv) birds

   (v) lamb

   (vi) monk

   (vii) heart 7

Exam. Code : 107202
Subject Code : 1739

Bachelor of Computer Application (BCA) 2nd Semester

DRUG ABUSE : PROBLEM, MANAGEMENT AND PREVENTION

Paper—VII

Time Allowed—3 Hours] [Maximum Marks—50

Note :— There are **EIGHT** long answer type questions of equal marks. Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each Section. The **FIFTH** question may be attempted from any section. (5×10=50)

SECTION—A

1. Write a note on the problem of Drug Addiction in India.
2. Define the role of Parents Supervision in the prevention of Drug Abuse.

SECTION—B

3. How Drug Abuse affects Employment and the process of learning ?
4. What are the responsibilities of teachers to prevent students from Drug Abuse ?

SECTION—C

5. What is the role of different forms of Media for the prevention of Drug Abuse ?

6. How advertisements on bad effects of drugs prevent Drug Abuse ?

SECTION—D

7. Write a note on Illegal Drug Trafficking and Policing of Borders.

8. Write a note on NDPS Act and its role in the prevention of Drug Abuse.

Exam. Code : 107202
Subject Code : 1735

Bachelor of Computer Application (BCA) 2nd Semester
NUMERICAL METHODS AND STATISTICAL TECHNIQUES
Paper—III

Time Allowed—Three Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions, by selecting at least **ONE** from each section. Fifth question will attempt from any section. All questions carry equal marks.

SECTION—A

1. (a) Find root of equation $x^3 - 5x + 3 = 0$ using bisection method, correct to three decimal places.

   (b) Given that $U = \frac{5xy^2}{z^3}$ and errors in x, y, z be 0.001. Compute maximum relative error in U when $x = y = z = 1$.

2. (a) Find real root of equation $x^3 + x - 1 = 0$ correct to three decimal places using false position method.

   (b) By taking $x_0 = 0.9$. Check whether the equation $x^3 - x^2 - x + 1 = 0$ has a double root or not.

SECTION—B

3. (a) Using Newton backward difference formula, find a polynomial of degree 4 in x :

x	1	2	3	4	5
y	1	−1	1	−1	1

(b) Evaluate $\int_0^1 \frac{dx}{x+1}$ correct to 3 decimal places using trapezoidal rule with $h = \frac{1}{6}$.

4. (a) Evaluate $\int_1^3 \frac{dx}{x}$ using $n = 8$ in Simpson's $\frac{1}{3}$ rule.

(b) Prepare a divided difference table for following data :

x	1	3	6	10	11
p(x)	3	31	223	1011	1343

SECTION—C

5. (a) Calculate standard deviation from following data :

x	12	14	16	18	20	22	24
f	6	12	18	26	16	10	8

(b) Calculate co-efficient of correlation from following data :

x	10	12	18	16	15	19	18	17
y	30	35	45	44	42	48	47	46

6. (a) Find mean from following data :

x	f
2–6	1
6–10	9
10–14	21
14–18	47
18–22	52
22–26	36
26–30	19
30–34	3

(b) Calculate missing frequency with median = 28 :

x	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
f	5	8	?	16	6

SECTION—D

7. (a) Fit a curve of farm $y = ae^{bx}$ to following data :

x	0	1	2	3
y	1.05	2.10	3.85	8.30

(b) Fit a parabola $y = a + bx + cx^2$ to following data :

x	1	2	3	4	5	6	7	8	9
y	2	6	7	8	10	11	11	10	9

8. (a) Fit a straight line to following data :

x	6	7	7	8	8	8	9	9	10
y	5	5	4	5	4	3	4	3	3

(b) Using method of least square, fit curve of type $y = ax + bx^2$:

x	1	2	3	4	5
y	1.8	5.1	8.9	14.1	19.8

Exam. Code : 107202
Subject Code : 1737

Bachelor of Computer Application (BCA) 2nd Semester

PUNJABI COMPULSORY

Paper–VI (i)

Time Allowed—3 Hours] [Maximum Marks—50

ਨੋਟ:— ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ **ਚਾਰ** ਭਾਗ ਹਨ। ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਇੱਕ ਭਾਗ ਵਿੱਚੋਂ **ਇੱਕ** ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। **ਪੰਜਵਾਂ** ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ ਨੰਬਰ ਬਰਾਬਰ ਹਨ।

ਭਾਗ—ਓ

1. ਮੋਹਨ ਭੰਡਾਰੀ ਦੀ ਕਹਾਣੀ 'ਘੋਟਣਾ' ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਲਿਖੋ।

ਜਾਂ

'ਟਿੱਕੇਖ਼ਾ' ਦਾ ਪਾਤਰ ਚਿੱਤਰਣ ਕਰੋ। 10

ਭਾਗ—ਅ

2. ਮਾਸਟਰ ਤਾਰਾ ਸਿੰਘ ਦਾ ਨਿਬੰਧ 'ਨਾਭਾ ਮੋਰਚਾ' ਦਾ ਸਾਰ ਆਪਣੇ ਸ਼ਬਦਾਂ ਵਿੱਚ ਲਿਖੋ।

ਜਾਂ

ਪ੍ਰੋ. ਤੇਜਾ ਸਿੰਘ ਦਾ ਨਿਬੰਧ 'ਮੁੜ ਪ੍ਰੋਫੈਸਰੀ' ਦੀ ਲਿਖਣ ਸ਼ੈਲੀ ਤੇ ਨੋਟ ਲਿਖੋ। 10

ਭਾਗ—ਏ

3. ਸ਼ਬਦ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿੰਦੇ ਹੋਏ ਬਣਤਰ ਦੇ ਆਧਾਰ ਤੇ ਇਸਦੀ ਵੰਡ ਉਦਾਹਰਣ ਦੇ ਕੇ ਕਰੋ।

ਜਾਂ

ਪੜਨਾਂਵ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿੰਦੇ ਹੋਏ ਇਸਦੀਆਂ ਕਿਸਮਾਂ ਸੰਬੰਧੀ ਉਦਾਹਰਣਾਂ ਦੇ ਕੇ ਚਰਚਾ ਕਰੋ। 10

ਭਾਗ—ਸ

4. (ੳ) ਹੇਠ ਲਿਖੇ ਪੈਰ੍ਹੇ ਦੀ ਇੱਕ-ਤਿਹਾਈ ਸ਼ਬਦਾਂ ਵਿੱਚ ਸੰਖੇਪ ਰਚਨਾ ਕਰੋ ਤੇ ਢੁੱਕਵਾਂ ਸਿਰਲੇਖ ਵੀ ਦਿਉ :

ਮੇਰੀ ਦਸਤਾਰ ਨੇ ਕਈ ਸੁਆਦਲੇ ਭੁਲੇਖੇ ਪਾਏ। ਆਮ ਤੌਰ ਤੇ ਹਿੰਦੁਸਤਾਨੀ ਮੁੰਡੇ 'ਰੂਮ ਵਿੱਚ ਰੂਮੀ ਪੁਸ਼ਾਕ' ਦੇ ਅਖਾਣ ਅਨੁਸਾਰ ਪ੍ਰਦੇਸ ਵਿੱਚ ਪ੍ਰਦੇਸੀਆਂ ਵਰਗਾ ਹੀ ਦਿੱਸਣ ਦਾ ਯਤਨ ਕਰਦੇ ਹਨ। ਪਰ ਮੈਨੂੰ ਆਪਣੀ ਦਸਤਾਰ ਕਰਕੇ ਉਨ੍ਹਾਂ ਤੋਂ ਅੱਡਰਾ ਦਿੱਸਣਾ ਪੈਂਦਾ ਸੀ। ਇਸ ਲਈ ਉਥੇ ਆਮ ਖ਼ਿਆਲ ਕੀਤਾ ਜਾਂਦਾ ਸੀ ਕਿ ਮੈਂ ਕਿਸੇ ਧਾਰਮਿਕ ਸਮਾਜ ਦਾ ਮੋਢੀ ਹਾਂ ਜਾਂ ਕਿਸੇ ਰਿਆਸਤ ਦਾ ਸ਼ਹਿਜ਼ਾਦਾ ਹਾਂ। ਅਖ਼ਬਾਰਾਂ ਦੇ ਰੀਪੋਰਟਰ ਮੇਰੇ ਪਿੱਛੇ ਲੱਗੇ ਰਹਿੰਦੇ ਸਨ। ਉਹ ਮੇਰੀਆਂ ਤਸਵੀਰਾਂ ਛਾਪ ਕੇ ਮੈਨੂੰ ਵੱਡਿਆ ਦੱਸਣ ਲਈ ਬਹੁਤੀਆਂ ਮਨ ਘੜਤ ਤਾਰੀਫ਼ਾਂ ਲਿਖ ਦਿੰਦੇ ਸਨ। 5

(ਅ) ਹੇਠ ਲਿਖੇ ਕੋਈ **ਤਿੰਨ** ਮੁਹਾਵਰਿਆਂ ਅਤੇ ਕੋਈ **ਦੋ** ਅਖਾਣਾਂ ਨੂੰ ਆਪਣੇ ਵਾਕਾਂ ਵਿੱਚ ਇਸ ਤਰ੍ਹਾਂ ਵਰਤੋ ਕਿ ਇਨ੍ਹਾਂ ਦੇ ਅਰਥ ਸਪੱਸ਼ਟ ਹੋ ਜਾਣ :

ਮੁਹਾਵਰੇ:— ਚੈਨ ਦਾ ਸਾਹ ਆਉਣਾ, ਗ਼ਰੀਬ ਮਾਰ ਕਰਨੀ, ਜ਼ਫ਼ਰ ਜਾਲਣਾ, ਘਰੋਂ ਘਾਟੋਂ ਜਾਣਾ, ਸਿਰ ਫੇਰਨਾ, 'ਜੱਸ ਖੱਟਣਾ'।

ਅਖਾਣ:— ਆਟੇ ਨਾਲ ਘੁਣ ਵੀ ਪਿਸ ਜਾਂਦਾ ਹੈ, ਆਪੇ ਫਾਥੜੀਏ ਤੈਨੂੰ ਕੌਣ ਛੁਡਾਵੇ, ਆਪ ਮੋਏ ਜਗ ਪਰਲੋ, ਸੱਸ ਨਾ ਨਨਾਣ ਵਹੁਟੀ ਆਪ ਪਰਧਾਨ।

3+2=5

ਨੋਟ:— ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ। 10