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S. S. Jain Subodh Girls P.G. College , Sanganer, Jaipur

Internal Examination, 2022

B.C.A. (Part -I)

(Faculty of BCA)

Paper II

Basic Mathematics-102

Time Allowed : Three Hours | Maximum Marks:100

Part I : (Very short answer) consists of 10 questions of 2 marks each. Maximum limits foreach questions is upto 40 words.

Part II : (Short answer) consists of 5 questions of 4 marks each. Maximum limits for each questions is upto 80 words.

Part III : (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART-I

(a) Define rational function and identity function.

(a) Define the domain of function $\frac{|x|}{x}$

(b) Define upper triangular matrix and diagonal matrix.

(c) Define determinant.

(d) Solve the equation $2x^2 - 98 = 0$

(e) Define data error and rounding error.

(f) Write formula for variance of variate x.

(g) Write the limits of coefficient of correlation.

(i) Define mutually exclusive and exhaustive events.

(j) Let A and B be the two events such that

$P(A) = \frac{1}{2}$ $P(B) = \frac{1}{4}$ $P(A \cap B) = \frac{1}{8}$ *then find* $P(A \cup B)$

(193)

PART-II

If $f: R \to R$ and $g: R-\{3\} \to R$ are the functions defined by f(x) =x^2+1 and g(x)= $\frac{x}{x+3}$ I

Then find gof and fog if they do exist.

Evaluate $\Delta = a \begin{vmatrix} x & a & a \\ & x & a \\ a & a & x \end{vmatrix}$

Solve the equation $\sqrt{(2x+9)} + x = 13$

Q. 5 Calculate the median for the following data

x_i	5	6	7	8	9	10	11	12	13
f_i	8	12	13	14	13	11	7	4	3

Q.6 Find the number of distinct permutations of letters in the word MATHEMATICS.

PART-III

6+6

Q. 7 (a) Prove that $f: R-\{0\} \to R-\{0\}$ where $f(x) = \frac{1}{x}$ for all $x \in R-\{0\}$ is invertible and it is the inverse of itself.

(b) If $f: R \to R$ where $f(x) = 2x-3$ for all $x \in R$, then prove that f is bijective. Also find f^{-1}.

OR

(a) Define (i) Injective function (ii) surjective function (iii) bijective function.

(b) If $f: X \to Y$ and $g: Y \to Z$ are onto functions then prove that gof is also onto function.

6+6

(a) Find the characteristic roots and corresponding characteristic vectors of the matrix

$$A = \begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$$

(b) If A= diag(1 2 -1) and B= diag(2 5 -2) then find A+2B

OR

(a) Prove that

$$\begin{vmatrix} x & y & z \\ x^2 & y^2 & z^2 \\ x^3 & y^3 & z^3 \end{vmatrix} = xyz(x-y)(y-z)(z-x)$$

(b) Evaluate $\begin{vmatrix} 2 & 3 & -2 \\ 1 & 2 & 3 \\ -2 & 1 & -3 \end{vmatrix}$ by expanding it along the third row.

6+6

(a) Construct the backward difference table for the data given below

f(0)=3, f(1)=12, f(2)=81, f(3)=200, f(4)=100, f(5)=8

(b) Prove that

(i) $\Delta - \nabla = \Delta\nabla$

(i) $E = 1 + \Delta$

(ii) $E^{-1} = 1 - \nabla$

OR

(a) Solve the equation

$$\left(\frac{x}{x+1}\right)^2 + 6 = 5\left(\frac{x}{x+1}\right); \quad x \neq -1$$

(b) Solve the equation

192

30

$$\frac{x+2}{2x+1}-\frac{x+3}{3x+1}=0$$

6+6

(a) Find the correlation coefficient for the following bivariate data

x_i	1	2	3	4
f_i	2	4	6	8

(b) Calculate the mean for the following distribution:

Class	5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45
Frequency	5	6	15	10	5	4	2	2

OR

(a) The age in years for fourteen young couples is given below:

Husband(x_i)	18	21	25	24	26	22	30	19	24	28	32	31	29	21
Wife (y_i)	18	19	20	21	24	21	24	18	22	19	30	27	26	19

Find the equations of line of regression.

(b) Calculate the modal value for the following frequency distribution

x_i	5	6	7	8	9	10	11	12	13
f_i	8	12	13	14	13	11	7	4	3

6+6

(a) An urn contains 8 white, 5 black and 9 red balls. Two balls are drawn at random.

Find the probability that (i) Both the balls are black (ii) one ball is black (iii) both the balls are of same colour (iv) one ball is white and other red.

(b) Two dice are thrown simultaneously . Find the probability of getting (i) a total of atleast nine (ii) a total of exactly nine (iii) a doublet of odd number (iv) same number on both dice

OR

(a) Prove that C(n, r) =C(n-1, r-1)+C(n-1, r)

(b) In how many ways can 5 boys and 4 girls sit around a table so that no two girls sit together.

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S. S. Jain Subodh Girls P.G. College , Sanganer, Jaipur

Internal Examination, 2022

B.C.A. (Part -I)

(Faculty of BCA)

Paper I

Elementary Physics

Time Allowed : Three Hours | Maximum Marks:100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

PART-I 10X2=20

1. (a) What is the Gauss's law?
   (b) Why electric field lines never cross?
   (c) Define the flux associated with a magnetic field.
   (d)What do you mean by domain?
   (e) Determine the total number of possible input combinations for a 4-input AND gate.
   (f)Determine the values of A, B, C and D that make the product term equal to 1.
   (g) What is multiplexer (MUX)?
   (h) Identify each device: (i) IC 7485 and (ii) IC 7446.
   (i) What do you mean by flip-flop?
   (j) How many flip-flops are required to produce a divide-by – 32 device?

PART-II 5X4=20

2. Prove that "The capacitance of a parallel-plate capacitor is proportional to the area of its plates and inversely proportional to the plate separation."
3. Classify the substances on the basis of magnetic susceptibility.
4. Write the output expression and Truth table for a 2-input NOR with input variables A and B.
5. Explain the basic operation of a Demultiplexer.
6. Draw the logic symbol and give the Truth table for a positive edge-triggered D flip-flop.

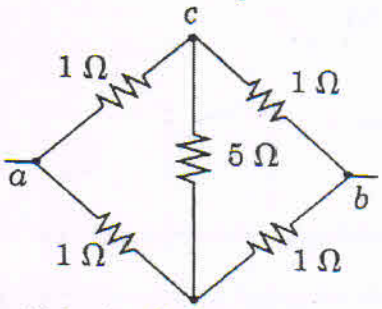
PART-III 5X12=60

7. (a) Draw the current-potential difference curve for an ohmic material. What does the slop of the curve represent? Explain the difference between resistance and resistivity. 8+4
   (b) Calculate the resistance of an aluminum cylinder that is 10.0 cm long and has a cross-sectional area of 2.00×10^{-2} m^2. (Resistivity of aluminum=2.82×10^{-8} Ω-m)

OR

(a) Write a short note on Kirchoff's rules. 6+6

(b) Consider five resistors connected as shown in figure below. Find the equivalent resistance between points a and b.



8. A toroid having N closely spaced turns of wire, calculate the magnetic field in the region occupied by the torus, a distance r from the center. 12

OR

Derive an expression of the magnetic force between two parallel conductors.

9. (a) Using Boolean algebra techniques, simplify this expression: 8+4
AB+A(B+C)+B(B+C)

(b) Convert the following SOP expression to an equivalent POS expression:
$\bar{A}\bar{B}\bar{C}+\bar{A}B\bar{C}+\bar{A}BC+A\bar{B}C+ABC$

OR

(a) What do you mean by Karnaugh maps? Explain briefly. 6+6

(b) Map the following SOP expression on a Karnaugh map: $\bar{A}+A\bar{B}+AB\bar{C}$.

10. Explain the concept of Parity. Implement a basic parity circuit with exclusive-OR gates and explain the operation of basic parity generating and checking logic. 3+5+4

OR

Describe the 7447 decimal to BCD priority encoder. 12

11. What is race-around condition? Explain the basic operation of Master-Slave J-K flip-flop. 4+8

OR

What do you mean by up/down counters? Draw the 3-bit up/down synchronous counter and write its truth table. 2+10

S. S. Jain Subodh Girls P.G. College , Sanganer, Jaipur
Internal Examination, 2022
B.C.A. (Part -I)
(Faculty of BCA)
Paper III
General English

Time Allowed : Three Hours | Maximum Marks:100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

(Part-1)

I. Answer the following questions:.Each question is of 2 marks. Word limit for each answer is 40 words. (2x10)

1. What is meant by 'barriers' in communication?
2. Change the sentence from active to passive-
   a. I shall mail the letter.
   b. Who broke this beautiful cup?
3. What is formal communication?
4. Write any four examples of non-verbal communication.
5. What is verbal communication? Explain with examples.
6. What is report?
7. What do you understand by communication? Define.
8. Write the difference techniques for preparing a good presentation?
9. What are the essentials of communication?
10. Explain the meaning of 'Electronic Media'.

(Part-2)

II. Answer the following questions. Each question is of 4 marks. Word limit for each question is 80 words. (5x4)

1. Write the points of preparation for attending the interview.
2. What is the purpose of Job Application?
3. What is the features of good report?
4. Differenciate between written and oral communication.
5. Explain interactive model of communication.

30 (150)

(Part 3)

III. Answer the following questions. Each question is of 12 marks. Draw neat and comprehensive sketches wherever necessary to clearly illustrate your answer. (5x12)

Q1 Write the seven Cs of Communication in detail.

OR

Describe the various style of Oral Communication.

OR.

Q.2 Explain different types of barriers of Communication.

OR

Highlight the merits and demerits of written communication. State few objectives of written communication.

Q.3 What do you mean by Power Point presentation? How ppt is prepared. Explain?

OR

Draft a Resume to apply in your dream company.

Q 4. Write a detailed report on the fresher party held in your college.

OR

What is visual presentation? Discuss various visual aids for presentation in detail.

Q. 5 What is the importance of listening? Discuss the principles of good listening.

OR

Write a letter to municipality corporation complaining about the negligence of garbage boxes in your locality.

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Internal Examination, 2022

B.C.A. (Part -I)

(Faculty of BCA)

Paper IV

(C Language)

Time Allowed : Three Hours | Maximum Marks:100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Attempt all questions from each unit

Unit I

Very-short questions

1. What do you mean by an algorithm?
2. How do we create constants in c? Give syntax.
3. What are the local variables?
4. Discuss purpose and syntax of break statements.
5. How do we read and write strings in C? Explain.
6. What is pointer?
7. Define pseudo code.
8. What do you understand by machine language?
9. Give syntax of switch statement.
10. Give syntax and purpose of printf().

Unit -II

Short-questions

Draw a flow chart to find out maximum of 3 numbers.

1. Explain different logical operators of C with suitable examples.
2. Explain while and do-while loop with example.
3. Write a code in C to compute factorial of a number using recursion.
4. What are different categories of function in C? Give examples.

Unit -III

3. Explain in detail the features of good programming language. Give the merits and demerits of machine language.

OR

What do mean by looping? Give the syntax of looping statements in C.

22 (121)

4. How is call by valued method of function calling different from call by reference method? Give suitable examples to support your answer.

OR

Write a pseudo code to display the following series:

a) 0,1,1,2,3,5.....n

b) 1,4,9,16,24.....n

5. With the help of suitable examples discuss the various decision making statements of C.

OR

Explain the different data type of C.

6. What are arrays? Write a code in C to find out sum of 10 numbers using arrays.

OR

What are pointer variables? Write a c code to illustrate the use to indirection operator (*) to access the value pointed by a pointer.

7. Discuss different formatted and unformatted I/O functions of C.

OR

Explain the following:

A) File modes

B)File handling

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Paper V

Computer Organization

Time Allowed : Three Hours | Maximum Marks:100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Q 1 Define System Bus.

Q 2 what do you understand by Modem?

Q 3 Define super computers.

Q 4 what do you understand by branch instructions of assembly language?

Q 5 Define Cache memory

Q 6 what do you understand by micro processor?

Q 7 Define EEPROM.

Q 8 Define following registersAccumulator, Program Counter, Instruction Register.

Q 9 what do you understand by DMA controller?

Q 10 Define SISC architecture.

Part II

Q 11 Describe OCR reader.

Q 12 Explain flag registers.

Q 13 Explain memory interfacing.

Q 14 what do you understand by addressing scheme? Explain with examples.

(30) (72)

Q 15 Differentiate microprocessor and microcontroller.

Q 16 explain TV tuner card.

Part III

Q 17 Describe different type of keyboard keys and their functionality.

OR

Explain internal structure of Hard Disc.

Q 18 Explain instruction cycle of computer system.

OR

What do you understand by Micro operations? Explain arithmetic and logic micro-operation with example.

Q 19 Explain Virtual memory concept.

OR

Explain main memory

Q 20 Explains system bus of computers.

OR

Explain classification of computers.

Q 21 Explain difference between Tape drive and Floppy disc.

OR

Explain different type of printers

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Paper VI

Office Management Tools

Time Allowed : Three Hours | Maximum Marks:100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Very Short Question (each 2 marks)

1. Explain Operating System?
2. What is Booting?
3. Explain the use of FORMAT Painter?
4. Define Macro?
5. Difference in worksheet and workbook?
6. What is a chart?
7. Explain slide sorter view?
8. Five purpose of master slide?
9. What are queries?
10. What are forms?

Short Question (each 4 marks)

Q1. Explain following DOS command----

(a) COPY (b) DEL (c) CD (d) MD

Q2. What do you understand by header and footer?

Q3. Write various types of addressing modes or cell referencing in MS-Excel?

Q4. Explain different types of view available in power point?

Q5. What are Primary keys and Foreign Keys in MS Access?

(25) (40)

Long Question (each 12 marks)

Q3. Write short notes on :

(a) System Files (b) Task Bar

(c) Recycle Bin (d) Text editor

Or

Why we say that OS works as a resource manager, explain it in detail?

Q4. Explain utility of Mail merge?

Or

Explain about super script, sub script, sorting and page layout options in MS-Word?

Q5. What is the difference between data sorting and data filtering? Explain with example?

OR

How do we create a chart in excel/Also describe different type of charts available in excel?

Q6. (i). How many ways we use the slide show in Power Point?

(ii). what is reharse timing in Power Point?

OR

(i) What do you mean by transition in Power Point?

(ii). Explain the kinds of presentation views are available in Power Point?

Q7. Explain any 5 advantage and disadvantages of database management system in details?

OR

Define database, database management system and its function

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S. S. Jain Subodh Girls P.G. College, Sanganer, Jaipur
Internal Examination, 2022
B.C.A. (Part -II)
(Faculty of BCA)
Paper I
Business Accounting

Time Allowed: Three Hours | Maximum Marks: 100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part I

Q 1 Define Book-keeping

Q 2 What do you mean by convention of disclosure?

Q 3.Write any two examples of real accounts.
Q 4 What is income earned in advance
Q 5. Define Money measurement concept.
Q 6. Write two objective of preparing Trial Blance.
Q 7 What is meant by Bank Overdraft?
Q 8 What is contingent Liability?
Q 9. Give Adjustment entry for Accrued Income?
Q 10. What do you mean by Average clause in insurance claim.

Part II

Q 11 What is meant by double entry system of accounting?

Q 12 State any four objectives of preparing Balance-sheet

Q 13 Distinguish between reserve & provisions
Q 14 Explain the process of accounting.

Q 15 Find out the amount of insurance claim from the data given below: stock of Goods Rs. 2,00,000 ¾ of which destroyed by fire

a) Sum insured Rs. 200000
b) Sum Insured Rs. 1,60,000 without average clause.

Part III

Q 16 Define Accounting. How does it differ from Book-keeping. Describe the scope of accounting.

OR

i) Explain any four important accounting conventions.
i) Explain the limitations of financial accounting

Q 17. What is petty cash book & explain its advantage? Explain advantage various types of subsidiary books.

OR

Journalise the following transaction in the books of Rashmi and post them into ledger

March 1	started business with cash	450000
March 3	bought goods on credit from ram Manohar	400000
March 4	goods sold for cash	300000
March5	goods sold to ram Gopal	100000
March 6	bought furniture	50000
March 8	purchase goods for cash	550000
March 10	Sold goods to Rajesh for cash	120000
March 12	Cash deposit into Bank	100000
March 14	Goods written by ram Gopal	5000
March 15	Paid to ram Manohar in full settlement	395000
March 16	withdrawal from bank for office use	20000

March 20	Paid salary to Mukesh	10,000
March 25	Machinery purchased	110000
March 28	Paid rent by cheque	5000

On 1st April 2015, Zenith Ltd. purchased a building for 200000. It was decided to charge depreciation @10% p.a. using the written down Value Method (WDV). However, on 31st March 2018, it was decided to change the method of depreciation to Straight-line Method. The remaining useful life of the building is estimated to be 5 years with a residual value of ₹ 100000. Prepare Building A/c.

OR

Explain following Errors with examples

i) Compensating errors
ii) Errors of omission
iii) Errors of commission
iv) Errors of Principle

Q 19. What do you mean by Balance sheet? How it is different from Trial Balance.

OR

How would you treat following items while preparing final accounts?

i)	Return in & Return out	vi) Carriage
ii)	Freight	vii) trade discount
iii)	Salaries & wages	viii) commission
iv)	Octroy	ix) rent
v)	Interest on capital	x) interest on drawing

Q 20 From the following particulars presented by Tilak for the year ended 31st March, 2020, prepare final accounts.

Particulars	₹	Particulars	₹
Gross profit	1,00,000	Interest received	6,000
Rent paid	22,000	Bad debts	2,000
Salaries	10,000	Provision for bad debts (1-4-2016)	4,000
Commission (Cr.)	12,000	Sundry debtors	40,000
Discount received	2,000	Buildings	80,000
Insurance premium paid	8,000		

Adjustments:

i. Outstanding salaries amounted to Rs. 4,000
ii. Rent paid for 11 months
iii. Interest due but not received amounted to Rs. 2,000
iv. Prepaid insurance amounted to Rs. 2,000
v. Depreciate buildings by 10%
vi. Further bad debts amounted to Rs. 3,000 and make a provision for bad debts @ 5% on sundry debtors.
vii. Commission received in advance amounted to Rs. 2,000

OR

What is Consequential Loss policy? How is the claim calculated under this policy?

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S. S. Jain Subodh Girls P.G. College , Sanganer, Jaipur
Internal Examination, 2022
B.C.A. (Part -II)
(Faculty of BCA)
Paper II
Discrete Mathematics

Time Allowed: Three Hours | Maximum Marks: 100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part -I

Q.1

(a) Convert $(1262)_{10}$ into binary form.

(b) Find the middle term in the expansion of $(x/2 - y/3)^8$

(c) If A={2,5,7} and B={ 3,5,6,8} find the symmetric difference of the sets A and B.

(d) If the number of elements in a set A be 3 and that in the set B be 2, what is the total number of relations from A to B.

(e) Determine the truth table of $\sim p \wedge q$.

(f) Find the truth table for $(p \wedge q) \Longrightarrow (p \vee q)$.

(g) Draw the graph C_5.

(h) Find the size of a graph having 10 vertex each of degree 5.

(i) Find the no. of edges in tree having 23 vertices.

(j) Draw the entire tree with 4 vertices.

Part-II

Q.2 Find the coefficient of x^{15} in the expression $x^5/(1-x)^4$

Q. 3 If $f: R \longrightarrow R$ is defined by f(x) =2x+7. Find the inverse of f.

Q.4 Show that the proposition $(p \wedge q) \wedge \sim (p \vee q)$.

Q.5 The Number of vertices of odd degree in a graph is always even number.

Q.6 Every vertex of a graph G with14 vertices and 25 edges having degree 3 or 5. How many vertices of degree 3 does G have?

Part-III

Q.7 (a) Prove by principal of mathematical induction that- 6+6

$1.2.3 + 2.3.4 + 3.4.5 + + \cdots (n+1)(n+2) = n(n+1)(n+2)(n+3)/4$

for all $n \in N$

(b) compute the sum $(110101)_2 + (100100)_2$.

OR

Solve the following recurrence relation by using generating function

$ar - 7a_{r-1} + a_{r-2} = 3^r,\ r \geq 2\ where\ a0 = 0\ and\ a1 = 6$

Q.8 (a) If A,B,C and D are sets , then prove that 6+6

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$(A \times B) \cap (C \times D) = (A \cap C) \times (B \cap D)$

(b) Prove that the relation R on the set Z of all integers defined by (x,y) ϵR $\Longrightarrow$x-y is divisible by n is an equivalence relation on Z.

OR

(a) If f(x) $=x^2+4$ and g(x) = 2x-1 , find f(g(x)) and f(f(x)).

(b) A survey shows that 74 % of the Indians like apples, whereas 68% like oranges. What percentage of the Indians like both apples and oranges.

Q.9 (a) Show that $p \leftrightarrow q \equiv (p \vee q) \longrightarrow (p \wedge q)$. 6+6

(b) If a and b are two elements of Boolean Algebra then $(a + b)' = a' + b'$

OR

(a) Find the Disjunction Normal Form (DNF) of the Boolean function

$$f(x, y, z) = (x + y + z)(x.\ y + x'.\ z')'.$$

(b) Verify that $(p \vee q) \wedge (\sim p \wedge \sim q)$ is a contradiction.

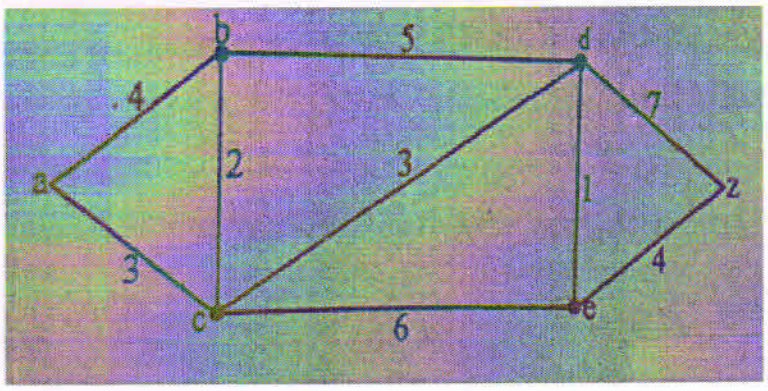
Q.10 (a) Find the complementary graph of $K_{3,3}$ and C_5. 6+6

(b) Prove that the number of edges in a bipartite graph on n vertices can not exceed $n^2/4$.

OR

(a) Define adjacency matrix of a graph and find the adjacency matrix of the graph $K_{2,3}$.

(b) Find the shortest path between A to Z in following graph.



Q.11 (a). Prove that a tree on n vertices has exactly n-1 edges. 6+6

(b) if h is the height of a balanced complete binary tree on n vertices, then

$$h = \log_2\left(\frac{n+1}{2}\right)$$

OR

(a) A graph G is connected if and only if it has a spanning tree.

(b) The Number of vertices in a binary tree is always odd.

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S. S. Jain Subodh Girls P.G. College, Sanganer, Jaipur
Internal Examination, 2022
B.C.A. (Part -II)
(Faculty of BCA)
Paper III
Operating System

Time Allowed: Three Hours | Maximum Marks: 100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part I

I. What is an operating system?
II. What is Multiprocessing system?
III. What is process?
IV. Explain Inter Process Communication?
V. Explain Deadlock?
VI. Define Physical and Logical address?
VII. Explain RPC?
VIII. What is demand paging?
IX. Difference between virus and worms?
X. Explain Distributed Computing?

Part II

Q2. Attempt all questions. Each question carries 4 marks.
I. What is the difference between Time sharing and Real Time System?
II. Explain PCB (Process Control Block)
III. Explain Resource Allocation Graph?
IV. What is cryptography? Also explain encryption and decryption methods.
V. Explain process synchronization?

Part III

Q3. What is an operating system? Explain different function of an operating system.

OR

Short notes on-
I. Device driver
II. Device Controller

Q4. What is scheduling? Explain different type of scheduling algorithms.

OR

What is deadlock? Explain Bankers algorithm with suitable example.

Q5. Describe different type of memory management technique?

OR

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Short notes on-

I. LRU

II. Swapping

Q6. What is File? Explain file allocation technique.

OR

What is the role of an operating System in security management.

Q7. What is distributed computing? Explain the process of RPC (Remote Procedure cell)

OR

Short notes on-

I. Windows operating system

II. Authentication

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B.C.A. (Part -II)
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Paper IV
Database management system

Time Allowed: Three Hours | Maximum Marks: 100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part 1

I) Define DBMS?
II) Name different type of data modal?
III) Write down any four DDL commands?
IV) What is aggregation?
V) What is transaction error?
VI) What is the difference between database design and database model?
VII) What is basic structure of an SQL expression?
VIII) Write a query to insert a row in a table?
IX) What is CASE?
X) What is inheritance?

Part 2

1) Explain any four application areas where database are used?
2) What do you understand by semantic model?
3) Explain use of Backup?
4) Explain all aggregate functions
   a)MIN b)MAX c) AVG
   d) SUM e) COUNT
With suitable example?
5) Differentiate between interprogram and intraprogram?

Part 3

1) Explain all database key?

OR

Describe DBMS architecture in detail?

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2) Explain the database security and recovery of database?

OR

Explain subclass/superclass & Attribute inheritance?

3) What are the different types of constraints? Explain column level and table level constraints?

OR

What do you mean by recovery of DB?

4) What do you mean by DDL, DML, and DCL commands?

OR

What is the use of Joins, explain its types?

5) Explain the difference between RDBMS and OODBMS?

OR

Explain the concept of inheritance?

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B.C.A. (Part -II)
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Paper V
Web Designing and Multimedia

Time Allowed: Three Hours | Maximum Marks: 100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part I

Q 1. what do you understand by Elements of HTML?

Q 2. Define cookies?

Q 3. Define list and its types?

Q 4. what do you understand by hyperlinks?

Q 5. Define DHTML?

Q 6. Describe CSS?

Q 7. What do you understand by scripting language?

Q 8. What do you understand by AJAX?

Q 9. what do you understand by photo shop? How can you resize an image in Photoshop?

Q 10. write short cut key of coral draw to combine the selected objects

Part II

Q 11. what do you understand by active-X controls?

Q 12. Describe hyper link in HTML

Q 13. Describe internal CSS with an example

Q 14. Explain Alert, Confirm and Prompt dialog boxes of java script

Q 15. What are Gradients in photo shop?

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Part III

Q 16. Create a table in HTML as follows

OR

Create frames in HTML as follows

Q 17. Explain iframe with the help of an example.

OR

Create a program of DHTML which uses External style sheet.

Q18. Explain AJAX in brief.

OR

Explain search engine.

Q19. What is coral draw explain its all tools.

OR

Explain that how you will change background of an image?

Q20. Describe elements of a web browser.

OR

Explain DOM model in JavaScript.

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Paper VI
Object Oriented Programming

Time Allowed: Three Hours | Maximum Marks: 100

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –I (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –I (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

PART 1

1. What do you mean by object oriented program?
2. Write the comparison between functional programming and oop approach?
3. Write the characteristics of oop?
4. What are tokens?
5. What is an array?
6. What is pointer in c++?
7. What is the difference between class and object?
8. What are the difference constructors and destructors?
9. What do you mean by types of member function in class?
10. What is function overloading?

PART 2

1. What do you mean by opening and closing file in c++?
2. What is exception handling?
3. Write the type of inheritance?
4. Explain constructors in detail and its type?
5. Write about difference among union, structure and class?

PART 3

3. Describe in detail about the following point
a. Object
b. Classes
c. Inheritance
d. Reusability
e. User define data types
f. Polymorphism
g. Overloading

OR

What do you mean by jumping statement?

4. Explain arrays and array types?

OR

Write short notes

a. Logical operators
b. Conditional operators
c. Relational operators
d. Bitwise operators
e. Assignment operators
f. Increment /decrement operators
g. Arithmetic operators
h. Special operators

5. Write the type of inheritance in details?

OR

What is the difference between virtual function and pure virtual function?

6. What do you mean b y templates in c++?

OR

Describe the following pointes

a. Opening a file
b. closing a file
c. Sequential file handling
d. Random file handling

7. Write about data type in c++?

OR

Short notes on the following

a. Access specifies b. Scope resolution
c. Type conversion d. Pointers in class

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Internal Examination, 2022
B.C.A. (Part -III)
(Faculty Of BCA)
Paper I (Paper-Code 301)
Data Structure

Time Allowed : Three Hours **Maximum Marks:100**

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part 1

Q 1 How Breath First Traversal works?

Q 2 What do you understand by dqueue?

Q3. What do you understand by time complexity of an algorithm?

Q4 what is binary tree?

Q 6 Define stack.

Q 7 Define Linked

List. Q 8 Define

bubble sort.

Q 9 Differentiate between sequential search and binary search.

Q10 Define Max heap.

Part II

Q 11 Explain different operations to be performed on Data Structure.

Q 12 Write algorithms to perform Push and Pop operations on Sack.

Q13 How insertion sort and selection sort are different?

Q14 Convert following expression in postfix from showing stack

.status

A+(B*C-(D/E-F)*G)*H

Q 15 Explain circular linked list.

Part III

Q 16 Explain Breath First Traversal algorithm of Graph.

OR

Explain selection sort algorithm with example.

Q 17 Explain Asymptotic notation.

OR

Explain time complexity of insertion sort with the help of an example.

Q 18 write warshall algorithm and explain it with the help of an example.

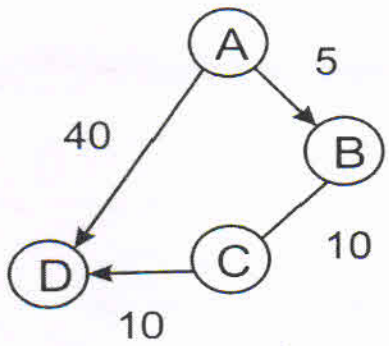
OR

Explain doubly linked list

Q 19 Write an algorithm to insert an element in a circular queue.

OR

Q 20 Consider the following weighted graph and calculate shortest path



OR

For a binary tree, the inorder and postorder travel sequences are as

Inorder: D, C, K, E, A, H, B, Q, J, I

Postorder: D, K, E, C, H, Q, J, I , B,

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B.C.A. (Part -III)

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Paper II (Paper Code 302)

System Design Concepts

Time Allowed : Three Hours **Maximum Marks:100**

Part -I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

Part -II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.

Part -III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Q1. Attempt all questions. Each question carries 2 marks. (20)

I) What is System.?
II) What is feasibility study.?
III) What is testing.?
IV)Explain DFD.
V) What is Protyping.?
VI)Explain difference between verification and validation.?
VII) What is Information System.?
VIII) What is object oriented approach.?
IX)What is top down approach.?
X) Explain decision tree.?

Q2. Attempt all questions. Each question carries 4 marks. (20)

I) Explain data oriented approach.
II) Explain different type of waterfall Model.?
III) What is the difference between Decision Tree and Decision Table.?
IV)Explain coupling and cohesion?
V) Explain Decision Support System.?

Q3. What is system.? Explain different phases of SDLC Model. (12)

OR

Explain various fact finding methods of system analysis.?

q.4 What is Data Flow Diagram.? Explain different symbols with an example. (12)

OR

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Short notes on-

I) E-R Model
II) Structured charts

Q,5 What is testing.? Explain different type of black box testing and white box testing.(12)

OR

Short notes on-

I) System testing
II) Verification and validation

Q.6 Explain COCOMO Model in detail.? (12)

OR

Short notes on

I) Software Project Planning
II) Cost benefit analysis

Q.7 What is MIS.?Explain characteristics and components of MIS. (12)

OR

Short notes on

I) Evaluation
II) Implementation
III) Documentation

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B.C.A. (Part -III)

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Paper III (Paper Code 303)

Networking

Time Allowed : Three Hours **Maximum Marks:100**

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

Part –II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.

Part –III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Q1. Attempt all questions. Each question carries 2 marks. (20)

A. Define a network.
B. What is IP address ?
C. What is the importance of Physical Layer in OSI Model.? D. What is SMTP.?
E. What is MODEM.?
F. Explain Bandwidth.?
G. What is Multiplexing.?
H. What is DNS>?
I. Explain Data Communication.?
J. Explain ISDN.?

Q2. Attempt all questions. Each question carries 4 marks.

(20) I) Explain different types of Networks.?
II) Explain different Elements of data communication.?
III) Explain data transmission modes with example.? IV) Explain IPV6 Addressing.?
V) Explain the difference between Asynchronous and Synchronous transmission?

Q3. Explain different types of network topology. (12)

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OR

Discuss different component of data communication network.? Also explain different types of network architecture.

Q.4 What is OSI model.? Explain in details. (12)

OR

What is Congestion. Explain different type of congestion control algorithms .?

Q.5 What is routing.? Explain different types of routing algorithm. (12)

OR

Explain in details

I) LRC
II) CRC

Q.6 Discuss circuit switching in details and also explain advantages and disadvantages of circuit switching. (12)

OR

What is multiplexing.? Explain different types of Multiplexing techniques.

Q.7 What is satellite communication in detail.? Explain Geosynchronous satellite.? (12)

OR

Describe the structure of an optical fiber and explain the mechanism of light propagation along the fiber.?

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B.C.A. (Part -III)
(Faculty Of BCA)
Paper IV (Paper-Code 304)
Core Java

Time Allowed : Three Hours **Maximum Marks:100**

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part I

Q 1 Name all type of Java Packages.

Q 2 What do you understand by JVM?

Q 3 Define abstract class.

Q 4 Differentiate between Error and Exception.

Q 5 What do you understand by Applet.

Q 6 What do you understand by containers in AWT.

Q 7 What is String Buffer object in java?

Q 8 Explain Socket in java.

Q 9 Explain super class and sub class in java.

Q 10 What is the meaning that java is platform independent.

Part II

Q 11 What is the use of inheritance? Explain its types

Q 12 Write a java program to check the given no is prime or not.

Q 13 What do you understand by chained exception? Explain it with example.

Q 14 What is multithreading in java? Write a program by extending Thread class.

Q 15 Explain Border layout and Grid layout.

(20) (127)

Part III

Q 16 Write a java program that shows Dynamic Method binding.

OR

Design a program in java that implements all type of inheritance.

Q 17 Explain different type of component classes in java.

OR

Write a program in java that illustrate applet

Q 18 What do you understand Thread synchronization in java? Explain with suitable example.

OR

What do you understand by JDBC? Explain all type of JDBC drivers

. Q 19 Explain difference between String and String Buffer classes.

OR

Explain JDK.

Q 20 What do you understand by Access Modifiers? How many types of Access Modifiers are there in java explain each with example.

OR

What do you understand by package in java how can we compile and execute package in java explain with suitable code.

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B.C.A. (Part -III)

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Paper V (Paper Code 305)

E-Commerce

Time Allowed : Three Hours **Maximum Marks:100**

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.
Part –II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.
Part –III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Part1

1. What is value chain?
2. What is technical design?
3. How is Quality assurance can be done?
4. What do you mean by client server architecture?
5. What is the role of Testing?
6. What is high level design in Business Commerce?
7. What is the role of credit card in E-Commerce?
8. What is Cyber law?
9. What is M-Wallet?
10. What is OTP, and how does it helps in security?

Part2

1. Explain various types of e-payment system in detail?
2. Describe the benefits of E-Commerce?
3. Differentiate between Traditional Commerce and E-Commerce
4. Discuss briefly about E-CRM?

(20) (A2)

5. Explain Buisness ethics in brief?

Part 3

Q1.Define EDI .Explain the architecture of EDI?

OR

Discuss all model of commerce with suitable examples?

Q2.Describe Client –Server model of E-Commerce with its Characteristics?

OR

What is detail design? Discuss its designing elements and designing step?

Q3.Differentiate between Validation and verification. Explain the validation process and its types?

OR

Explain types of testing use in E-Commerce?

Q4.Explain various type of E-payment system in detail?

OR

Explain various type of testing use in E-Commerce?

Q5.What is E-banking? Explain E-Banking risk in detail?

OR

What do you mean by online shopping? Discuss the working of any 4 website used for online shopping?

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B.C.A. (Part -III)

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Paper VI (Paper Code 306)

Php

Time Allowed : Three Hours **Maximum Marks:100**

Part –I (Very short answer) consists 10 questions of two marks each with two questions from each unit. Maximum limit for each question is up to 40 words.

Part –II (Short answer) consists 5 questions of four marks each with one question from each unit. Maximum limit for each question is up to 80 words.

Part –III (Long answer) consists 5 questions of twelve marks each with one question from each unit with internal choice.

Unit I

Very-short Questions

1. What is the difference between server side and client side scripting?
2. Write about the PHP evolution.
3. Describe features of PHP and syntax also.
4. Write about the operators in PHP.
5. What do you mean by array?
6. How can you define strings in PHP?
7. What are functions in PHP?
8. How to handle form data handling?
9. How to open and close and file in PHP?
10. What is database handling?

Unit-II

Short questions

1. Explain operation and expressions in PHP.

2 Explain branching statements in PHP.

3. Write short notes on:

a. strstr()
b. strpos()
c. sprintf()
d. vprintf()
e. split()
f. str_replace ()

4. What is the difference between cookies and session?

5. What is the difference between $_GET() and $_POST() methods?

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Unit-III

Long questions

3. Explain for ,while and do while loops with their syntax and examples.

Or

Explain types of arrays in php.

4.Write in detail about the string library functions in php.

Or

Explain following types of functions in php.

a. Defining a function

b. Calling a function

c. parameter passing

d. returning values from functions

5. Explain regular expression in detail.

Or

Explain exception handling and write about try, catch and throw in detail.

6. How can URL encryption and security functions applied in PHP?

Or

Write short notes on following:

a. Variable
b. Constant
c. Data types
d. Operators *e.*
Expression

7. Write about the connection with MYSQL database in detail.

Or

How can we perform operations of insert, delete, update and select?