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NBCA/M-24

OBJECT ORIENTED PROGRAMMING USING C++

Paper : B23-CAP-201

(CC-A2) (BCA)

Time : Three Hours] [Maximum Marks : 50

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. Question No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. Define following terms :
- (i) Data hiding.
 - (ii) Resolution operator.
 - (iii) Copy constructor.
 - (iv) Define any two string operator.
 - (v) Handling uncaught exceptions. (5×2=10)

UNIT-I

2. Explain following in detail :
- (a) Inline Functions.
 - (b) Union in C++. 10
3. Explain following in detail :
- (i) Function overloading.
 - (ii) Pointer. 10

UNIT-II

4. What is the use of constructor and destructor in C++? How do we declare them? Write a program to demonstrate the concepts. 10
5. What are friend functions and friend classes? Write a normal function which adds objects of the complex number class. Declare this normal function as friend of complex class. 10

UNIT-III

6. Explain following in detail :
(i) Abstract Class.
(ii) Virtual Base Class. 10
7. Write and explain a program in C++ to overload any unary operator. 10

UNIT-IV

8. What is the benefit of handling exceptions? How can you catch all exceptions? Explain with suitable example. 10
9. What do you mean by polymorphism? How can you achieve polymorphism with pointers? How late binding is different from early binding? 10

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NBCA/M-24

INTRODUCTION TO WEB TECHNOLOGIES

Paper : B23-CAP/CTS/CAL/CDS-202

(CC-B2)

(B.C.A.)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question number 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Discuss the difference between a URL and a URI.
- (b) Discuss the use of comments in HTML. How do you add comments to an HTML document?
- (c) What are the differences between margin and padding in CSS?
- (d) How do you create and manipulate objects in JavaScript?

UNIT-I

2. (a) Explain the concept of a search engine and discuss the key components of a search engine.
- (b) What is a web browser? What are the common functions provided by it? Discuss.

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3. (a) What are the best practices for optimizing website performance and speed?
- (b) What is HTTP? Can you explain the difference between HTTP and HTTPS?

UNIT-II

4. (a) Discuss the difference between `<table>`, `<tr>`, `<td>`, and `<th>` tags in HTML.
- (b) Explain the difference between the GET and POST methods in HTML forms. When would you use each method?
5. (a) Describe the structure of an unordered list in HTML. What elements are used to create list items within an unordered list? Illustrate.
- (b) Explain the difference between block-level and inline HTML elements.

UNIT-III

6. (a) How does the descendant selector work in CSS, and when would you use it?
- (b) What are the different CSS link states? Discuss using examples.
7. (a) Explain the concept of the CSS box-sizing property and how it affects the layout of elements.

- (b) What is grouping of CSS selectors, and why is it useful in web development? Discuss.

UNIT-IV

8. (a) Discuss the importance of JavaScript in building dynamic and interactive web applications.
- (b) What is the difference between var, let, and const in terms of scope and hoisting?
9. (a) How do you define and call functions in JavaScript? Illustrate.
- (b) What are the different types of loops in JavaScript? Discuss.
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3952

NBCA/M-24

BCA

(Concept of Operating Systems)

Paper-B23-CAP/CTS/CAL/CDS

(CC-C2)

Time : Three Hours]

[Maximum Marks : 50

Note : Question No. 1 is compulsory. In addition attempt *four* more questions, selecting *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. Attempt all the followings :
 - (a) Process Control Block.
 - (b) Deadlock Avoidance.
 - (c) Thrashing.
 - (d) Real time processing.
 - (e) Swapping. (5×2=10)

UNIT-I

2. What is an Operating System? Explain the role of Operating System as resource manager. Explain the important functions of Operating System in detail. (10)

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3. Differentiate between followings :
- (a) Multiprogramming and multitasking. (5)
 - (b) Single user and multi-user operating system. (5)

UNIT-II

4. Consider the following set of processes that arrive at time 0, with the length of CPU Burst time (or run time) given in milliseconds.

Process	Burst Time
P1	8
P2	4
P3	7
P4	5

Calculate Average Waiting Time and Average Turnaround time for following :

- (i) Shortest job first.
 - (ii) Round Robin Scheduling.
- Consider time quantum of 5 milliseconds. (10)

5. (a) Define deadlock. Explain the necessary conditions for deadlock. (5)
- (b) What is a Process? Explain process state transition diagram in detail. (5)

UNIT-III

6. Explain the concept of paging with suitable example. Write its advantages and disadvantages. (10)

7. Explain following :
- (a) Virtual Memory. (5)
 - (b) Inter-process communication. (5)

UNIT-IV

8. What is file management? Explain various file access methods and file protection mechanisms in detail. (10)
9. Explain following with example :
- (a) C-SCAN Scheduling. (5)
 - (b) Directory Structure. (5)
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NBCA/M-24
MATHEMATICAL FOUNDATIONS

FOR COMPUTER SCIENCE-II
Paper-B23-CAP-CTS/CAL/CDS-204

(CC-M2) BCA

Time : Three Hours]

[Maximum Marks : 20

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

Compulsory Question

- (a) Write integration of basic trigonometric functions.
(b) Differentiate between grouped and ungrouped data.
(c) What is meant by correlation?
(d) What do you understand by linear regression?

(4×1=4)

UNIT-I

- Solve the integral $\int \frac{x^2 dx}{(x+bx)^2}$.

- What are various ways to represent data using graphs?
(4)

UNIT-II

- The average salary of male employees in a firm was Rs.520 and the number of females was Rs. 420. The mean salary of all the employees was Rs. 500. Find the percentage of male and female employees.
(4)

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5. Discuss the various measures of dispersion using suitable examples. 4

UNIT-III

6. Calculate the coefficient of correlation between x and y :

x :	22	24	25	27	21	22	23
y :	41	44	45	48	40	42	44

(4)

7. The ranks of the same 16 students in Mathematics and Physics are as follows. Two numbers within brackets denote the rank of the students in Mathematics and Physics.

(1, 1) (2, 10) (3, 3) (4, 4) (5, 5) (6, 7) (7, 2) (8, 6)
 (9, 8) (10, 11) (11, 15) (12, 9) (13, 14) (14, 12)
 (15, 16) (16, 13).

Calculate the rank correlation coefficient for proficiencies of this group in Mathematics and Physics. (4)

UNIT-IV

8. Fit a straight line to the following data :

X	1	2	3	4	6	8
Y	2.4	3	3.6	4	5	6

(4)

9. Calculate the regression coefficient and obtain the lines of regression for the following data :

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

(4)

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PACE/M-24

12723

ENGLISH LANGUAGE AND
COMMUNICATION SKILLS : LEVEL 2
B23-AEC-211

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (i) How many Phonemes are there in the sound system of English language ?
- (ii) How many diphthongs are there in the sound system of English language ?
- (iii) Write two essential techniques for enhancing speaking skills.
- (iv) How many types of tenses are there in English ?
- (v) Give the words of WH family.
- (vi) What is a Dialogue ?
- (vii) Punctuate the following sentence :
do you know ramesh

Unit I

2. Transcribe any *fourteen* words from the list given below :

- | | |
|-------------|-------------|
| (i) Chain | (ii) Ship |
| (iii) Tool | (iv) Man |
| (v) Woman | (vi) Light |
| (vii) Hate | (viii) Card |
| (ix) Bill | (x) Pull |
| (xi) Meet | (xii) Nib |
| (xiii) Date | (xiv) Luck |
| (xv) Rat | (xvi) Kite |
| (xvii) Zoo. | |

(For Blind Students Only)

Develop a story from the given hints :

Two cats – hungry – a loaf of bread – can't divide – each greedy – wants more – a clever monkey – offered to help – bit by bit – ate the bread – his fee – bread finished – cats foolish – still hungry.

3. Write down phonetic symbols of any *seven* pure vowels and give two examples of each vowel with transcription.

(For Blind Students Only)

Develop a story from the given hints :

Farmer in a village – had a hen – golden egg – became rich by selling golden eggs – greedy – thought to get all eggs at a time – killed hen – found no eggs – became sad.

Unit II

4. Describe the tips to boost confidence in speaking.
5. What do you mean by Volume and Pitch ?

Unit III

6. Punctuate the following sentences :
 - (i) mr ramlal is an mla of our area
 - (ii) her sister rama stood first in quiz competition
 - (iii) she said where are you going
 - (iv) his father in law is a doctor
 - (v) milton said better to reign in hell than to serve in heaven
 - (vi) may i come in sir
 - (vii) the times of india is a leading newspaper
7. Describe the uses of comma (,) with examples.

Unit IV

8. How many types of tenses are there ? Describe in detail.
9. Fill in the blanks with correct form of verbs given in brackets :
 - (i) The Italians.....in Italy. (live)
 - (ii) I.....a movie yesterday. (see)
 - (iii) He.....in Mumbai since 2018. (live)
 - (iv) Edison.....the bulb. (invent)
 - (v) What.....the latest news ? (be)
 - (vi) Two and two.....four. (make)
 - (vii) I.....for a check-up tomorrow. (go)

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PVAC/M-24

12729

ENVIRONMENTAL STUDIES

B-23-VAC-201

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

प्रत्येक इकाई से एक प्रश्न चुनते हुए, कुल पाँच प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 अनिवार्य है। सभी प्रश्नों के अंक समान हैं।

1. Define the following : 7×1=7

- (a) Environment
- (b) Food chains and food web
- (c) River
- (d) Biodiversity
- (e) Pollutant
- (f) Earthquake
- (g) Global warming.

निम्नलिखित को परिभाषित कीजिए :

- (अ) पर्यावरण
- (ब) खाद्य शृंखला और खाद्य जाल

- (स) नदी
- (द) जैव विविधता
- (इ) प्रदूषक
- (फ) भूकंप
- (ग) ग्लोबल वार्मिंग ।

Unit I (इकाई I)

2. Explain the structure and function of any aquatic ecosystem with example. 7
किसी जलीय पारिस्थितिकी तंत्र की संरचना और कार्य को उदाहरण सहित समझाइए ।
3. Write descriptive notes on the following : 2×3.5=7
- (i) Multidisciplinary nature of environmental studies
 - (ii) Types of ecosystems.
- निम्नलिखित पर वर्णनात्मक टिप्पणियाँ लिखिए :
- (i) पर्यावरण अध्ययन की बहुविषयक प्रकृति
 - (ii) पारिस्थितिकी तंत्र के प्रकार ।

Unit II (इकाई II)

4. Describe the different *in-situ* methods of biodiversity conservation. 7
जैव विविधता संरक्षण के विभिन्न इन-सीटू तरीकों का वर्णन कीजिए ।

5. Explain the importance of forests. 7
वनों के महत्व की व्याख्या कीजिए ।

Unit III (इकाई III)

6. Explain the different methods of solid waste disposal. 7
ठोस अपशिष्ट निपटान के विभिन्न तरीकों की व्याख्या कीजिए ।
7. Write down the causes and health effects of air pollution. 7
वायु प्रदूषण के कारणों और स्वास्थ्य पर पड़ने वाले प्रभावों को लिखिए ।

Unit IV (इकाई IV)

8. Explain the impacts of human population growth on environment. 7
पर्यावरण पर मानव जनसंख्या वृद्धि के प्रभावों की व्याख्या कीजिए ।
9. What is disaster management ? Explain by using example of floods. 7
आपदा प्रबंधन क्या है ? बाढ़ का उदाहरण देकर समझाइए ।

NSEC/M-24

14265

BUSINESS COMMUNICATION

Paper – B23-SEC-214

(SEC)

Time : Three Hours]

[Maximum Marks : 50

Note : Part A (10 marks) is compulsory. From Part B, attempt four questions in all, selecting *one* from each unit (10 marks each).

नोट : भाग-अ (10 अंकों का) अनिवार्य है। प्रत्येक इकाई से एक प्रश्न चुनते हुए भाग-ब से कुल चार प्रश्न कीजिए (प्रत्येक 10 अंक का)।

PART-A (भाग-अ)**Compulsory Question (अनिवार्य प्रश्न)**

1. Write notes on the following :

- (i) Semantic v/s Psychological barriers to communication.
- (ii) Essentials of a good press communique.
- (iii) Stress Interviews and Panel Interviews.
- (iv) Ingredients of a good body language.

निम्नलिखित पर टिप्पणी लिखिए :

- (i) संचार के लिए अर्थसंबंधी बनाम मनोवैज्ञानिक बाधाएं।
- (ii) एक अच्छी प्रेस विज्ञप्ति की आवश्यकताएं।
- (iii) तनाव साक्षात्कार और पैनल साक्षात्कार।
- (iv) एक अच्छी हाव-भाव की भाषा के तत्व।

PART-B (भाग-ब)

UNIT-I (इकाई-I)

2. How can an effective communication win the day for businesses? What can be the repercussions of an ineffective business communication? Discuss citing suitable examples.

प्रभावी संचार व्यवसायों के लिए किस प्रकार सफलता प्राप्त कर सकता है? अप्रभावी व्यावसायिक संचार के अप्रत्यक्ष परिणाम क्या हो सकते हैं? उपयुक्त उदाहरण देते हुए विवेचना कीजिए।

3. Discuss the prominent patterns used in business communication. Throw light on 3 modern day communication channels used by businesses.

व्यावसायिक संचार में उपयोग किए जाने प्रमुख पैटर्न की विवेचना कीजिए। व्यवसायों द्वारा उपयोग किए जाने वाले तीन आधुनिक दिनों के संचार चैनलों पर प्रकाश डालिए।

UNIT-II (इकाई-II)

4. Write a letter to your vendor who has delayed the supply of automobile spare parts to your passenger car manufacturing company. Present the letter in strict tone for non-compliance with the promised time.

अपने विक्रेता को एक पत्र लिखें जिसने आपकी यात्री कार निर्माण कंपनी को ऑटोमोबाइल स्पेयर पार्ट्स की आपूर्ति में देरी की है। वादा किए गए समय के भीतर गैर अनुपालन के लिए सख्त लहजे में पत्र प्रस्तुत करें।

5. Write a circular for an emergent meeting of top management in light of possible workers' strike in near future.

निकट भविष्य में संभावित श्रमिकों की हड़ताल के मद्देनजर शीर्ष प्रबंधन की एक आपात बैठक के लिए एक परिपत्र लिखें।

UNIT-III (इकाई-III)

6. Prepare a format for a structured interview that you would be taking in the capacity of senior HR Manager of a media company. The interview is for the post of creative writer in a leading national daily.

मीडिया कंपनी के मुख्य मानव संसाधन प्रबंधक के रूप में आप जो साक्षात्कार लेंगे, उसके लिए एक संरचित साक्षात्कार का प्रारूप तैयार करें। यह साक्षात्कार एक प्रमुख राष्ट्रीय दैनिक में रचनात्मक लेखन के पद के लिए है।

7. What should be taken care of while communicating in a group? What additional care is warranted in such a communication viz-a-viz communicating with an individual?

समूह में संवाद करते समय क्या ध्यान रखना चाहिए? किसी व्यक्ति के साथ संवाद करते समय इस तरह के आमने-सामने के संवाद में क्या अतिरिक्त सावधानी बरतनी चाहिए?

UNIT-IV (इकाई-IV)

8. Why is Public Relation so important in a business organisation? How can it negate negative publicity and thrive on positive publicity?

एक व्यावसायिक संगठन में जन संपर्क इतना महत्वपूर्ण क्यों है? यह नकारात्मक प्रचार को कैसे नकार सकता है और सकारात्मक प्रचार पर कैसे समृद्ध हो सकता है?

9. What are the prominent channels relating to audio-visual communication? Why has it become so decisive in modern day business world?

दृश्य-श्रव्य संचार से संबंधित प्रमुख चैनल कौन-कौन से हैं? आधुनिक समय की व्यावसायिक दुनिया में यह इतना निर्णायक क्यों बन गया है?