



6446

B.Sc. / B.Com. / Hons. (Part-I) (Semester-II)
Examination, 2025
AEC- (General English)
English and Communication

Duration of Examination: 3 Hours

Max. Marks: 70

परीक्षा की अवधि: 3 घण्टा

पूर्णांक: 70

1934
Instructions to the Candidates:परीक्षार्थी के लिए निर्देश:-*Note:- The question paper is divided into 02 Parts : Part- A & Part B.***Part-A**

Will consist of 10 compulsory questions. Answer to each question shall be limited up to 50 words. Each question will carry 02 marks. Total 20 Marks. (Marks-10x2=20)

Part-B

Will consist of 10 questions. Student will have to answer 05 questions, selecting At least one questions from each unit. The answer to each question shall be limited to 400 words. Each question carries 10 Marks. Total 50 Marks. (Marks-5x10=50)

1934

Part-A (Compulsory)

- 1- Why did the parents tell the little princess not to whistle?
- 2- What happens to parents when their child is diagnosed to have some problem with his/her eye-sight?
- 3- From which collection the story " The shoes of My Sensei' has been taken?
- 4- How is the Indian system of education different from the American?
- 5- Fill in the blanks with correct question tags.
 - (i) Ram will do this _____ ?
 - (ii) Sia is dancing _____ ?
 - (iii) I wrote a poem _____ ?
 - (iv) He plays cricket _____ ?
- 6- Give the correct meaning of the given proverbs-
 - (i) Cry over spilled milk.
 - (ii) Blessing in disguise.
 - (iii) Don't judge a book by its cover.
 - (iv) When pigs fly.



6446

- 7- Fill in the blanks with the correct form of verb.
- (i) The police _____ the thief yesterday. (catch)
 - (ii) She seldom _____ late. (come)
 - (iii) The train _____ before we reached the station. (leave)
 - (iv) Bread and butter _____ a wholesome food. (be)
- 8- Write synonyms and antonyms of the following.
- (i) Innocent
 - (ii) Diligent
 - (iii) Happy
 - (iv) Start
- 9- Rewrite the given sentences correcting the errors.
- (i) I am interested on the book.
 - (ii) He is a honest man.
 - (iii) It was him who came running into the classroom.
 - (iv) Either Rita or Seema are absent.
- 10- Rewrite the jumbled sentence in correct manner.
- (i) is / my / favourite / cooking / hobby.
 - (ii) to / the / went / park / children / yesterday / play.
 - (iii) cake / my / birthday / on / I / for / a / want.
 - (iv) summer / when / camp / will / start / the.

Part-B (Compulsory)**Unit-I**

- 11- Read the passage from the prescribed text book and answer the given questions.

Once upon a time there was a little princess who was good at whistling. Don't whistle said her mother. Don't whistle, said her father but the child was good at it and went on whistling. Years went by and she became a woman. By this time she whistled beautifully. Her parents grieved. What man will marry a whistling woman? said her mother dolefully. 'well', said her father, 'We will have to make the best of it. I will offer half my kingdom and the princess in marriage to any man who can beat her at whistling.'

- (a) Name the story and the author.
- (b) At what was the princess good?



6446

- (c) Why did her parents grieve?
(d) What offer was proclaimed by the king?
(e) What was the worry of the parents?
12- What are the main ideas expressed in the lesson 'Women in the food chain' by Vandana Shiva.
13- Elaborate the main theme of the story 'Personal Friend'.

Unit-II

- 14- What is 'brain drain'? What do you consider are the reasons for brain drain?
15- Recently your college hold a seminar of NEP 2020. Prepare a report in about 100-125 words on the topic.

OR

Your college organised an exhibition - cum - sale of the items prepared under work experience certificate by the students. Prepare a report of it.

- 16- Name the tense of the following sentences.
- (a) Rohan drinks coffee every morning.
 - (b) The boy got up late and missed the bus.
 - (c) Have you read 'pride and prejudice'?
 - (d) They have been working since morning.
 - (e) I don't like mobile.
 - (f) We shall go to Jaipur next week.
 - (g) Did you wash the car yesterday?
 - (h) The students will have completed the home work by Monday.
 - (i) The children were playing football.
 - (j) Does she go to school daily?

Unit-III

1934

- 17- You are Antima, a web- content manager. Write a job application with CV to offer your services to M/S Tenant Technologies, Gurugram, Haryana.

OR

You are Amit. Write a job application and CV for the post of Assistant Professor in english to SUN University Mumbai.



6446

- 18- Write a letter to The Chairman of the Sanitation Committee requesting him/her to solve the problem of the garbage bin which is daily becoming a source of discard.

1934

OR

- The computer hub, New Delhi has advertised a discount of 20% on all types of computers and related hardware. You are Rohan, owner of soft point innovations, Nehru Place , New Delhi. Place an order suitable items for your company.

- 19- You are Anju / Anshu, Manager, Anju Electronics, Jodhpur. Write to M/S. Ultra Modern Electronic House, 15 wille parlle, Mumbai for supplying defective video cameras.

- 20- Read the passage given below carefully and answer the given questions that follow.

The test of a great book is whether we want to read it only once or more than once. Any really great book we want to read the second time even more than we wanted to read it the first time; and every additional time that we read it we find new meaning and new beauties in it. A book that a person of education and good taste does not care to read more than once is very probably not worth much. But we cannot consider the judgement of a single individual infallible. The opinion that makes a book great must be the opinion of many. For even the greatest critics are apt to have certain Dullness. carlyle for example, could not endure browning, Byron could not endure some of the greatest of english poets. A man must be many sided to utter a trustworthy estimate of many books. We may doubt the judgement of the single critic at times. But there is no doubt possible in regard to the judgement of generations. Even if we cannot at once perceive anything good in a book which has been admired and praised for hundreds of years, we may be sure that by trying, by studying it carefully, we shall at least be able to feel the reason of this admiration and praise. The best of all libraries for a poor man would be a library entirely composed of such great works only, books which have passed the test of time.

- (a) What is the quality of a great book?
- (b) What would a poor man's library contain?
- (c) Whose work did carlyle find difficult to appreciate and why?
- (d) In which case is a judgement about a book beyond doubt?
- (e) What is the main ideas of this passage.

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6464

Bachelor of Computer Applications (BCA)
(Part-I) (Semester-II) Examination, 2025
—DSCC-BCA-204
(Database Technology)

Duration of Examination: 3 Hours

परीक्षा की अवधि: 3 घण्टा

Max. Marks: 70

पूर्णांक: 70

Note:- The question paper is divided into 02 Parts: Part - A & Part-B.

Part-A

Will consist of 10 compulsory questions. Answer to each question shall be limited up to 50 words. Each question will carry 02 marks. Total 20 Marks. (Marks-10×2=20)

Part-B

Will consist of 10 questions. Student will have to answer 05 questions, selecting At least one questions from each unit. The answer to each question shall be limited upto 400 words. Each question carries 10 marks. Total 50 Marks. (Marks-5×10=50)

340

Part-A

1. Define data abstraction?
2. Write five responsibility of DBA.
3. What do you mean by domain?
4. Give an example of candidate key.
5. Define heap file organization.
6. What is the purpose of decomposition?
7. Define normalization.
8. Why we use MYSQL?
9. Which statement we use to insert multiple values into table in MYSQL?
10. Which function we use to calculate dates in MYSQL?

Part-B**Unit-I**

11. Compare the database system with conventional file system in detail.
12. Explain database design process and its stages.
13. Explain the types of networks and their purposes.
14. Explain primary file organization in detail.



6464

Unit-II
340

15. Explain the basic operations of relational algebra and their uses.
16. Explain relational operator in detail.
17. Explain four type of functional dependency in detail.

Unit-III
340

18. Consider the given SQL string:
"12# All the Best!"

Write suitable SQL queries for the following:

- (a) Returns the position of the first occurrence of the substring "the" in the given string.
- (b) To extract last five characters from the string.
19. Create the SQL table and insert following records in CAR_SALES, write suitable queries for the following
- | Number | Segment | Fuel | QT1 | QT2 |
|--------|--------------------|--------|-------|-------|
| 1 | Compact Hatch Back | Petrol | 56000 | 70000 |
| 2 | Compact Hatch Back | Diesel | 34000 | 40000 |
| 3 | MUV | Petrol | 33000 | 35000 |
| 4 | MUV | Diesel | 14000 | 15000 |
| 5 | SUV | Petrol | 27000 | 54000 |
| 6 | SUV | Diesel | 18000 | 30000 |
| 7 | Sedan | Petrol | 8000 | 10000 |
| 8 | Sedan | Diesel | 1000 | 5000 |
- (a) Display fuel wise average sales in the first quarter.
- (b) Display segment wise highest sales in the second quarter.
- (c) Display the records in the descending order of sales in the second quarter.
20. Write suitable SQL queries for the following:-
- (a) To calculate the exponent for 3 raised to the power of 4.
- (b) To display current date and time.
- (c) To round off the value - 34.4567 to 2 decimal place.



6462

Bachelor of Computer Applications (BCA)
(Part-I) (Semester-II) Examination, 2025
DSCC-BCA-202
(Discrete Mathematics)

Duration of Examination: 3 Hours

परीक्षा की अवधि: 3 घण्टा

Max. Marks: 70

पूर्णांक: 70

Note:- The question paper is divided into 02 Parts: Part - A & Part-B.**Part-A**

Will consist of 10 compulsory questions. Answer to each question shall be limited up to 50 words. Each question will carry 02 marks. Total 20 Marks. (Marks-10×2=20)

Part-B

Will consist of 10 questions. Student will have to answer 05 questions, selecting At least one questions from each unit. The answer to each question shall be limited upto 400 words. Each question carries 10 marks. Total 50 Marks. (Marks-5×10=50)

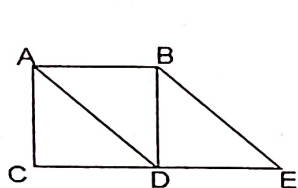
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Part-A

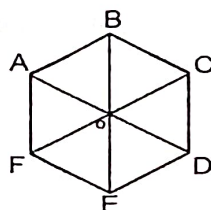
- Using truth table show that the proposition $P \vee \neg(P \wedge Q)$ is a tautology.
- Find the truth table for the statement $P \rightarrow Q$.
- Give an example of an Euler graph.
- Give an example of a graph which is Eulerian but not Hamiltonian.
- Show that $(P \rightarrow (Q \rightarrow R)) \rightarrow ((P \rightarrow Q) \rightarrow (P \rightarrow R))$ is a tautology.
- Define isomorphism of two graphs.
- Define graph & complete graph with example.
- State the principle of mathematical induction.
- If $A = \{2, 3, 4, 5\}$ and $B = \{0, 1, 2, 3\}$ find $A \cap B$
- If $A = \{1, 2, 3\}$ $B = \{3, 4, 5\}$ and $C = \{0, 2, 3\}$ find $(A \cap B) \times C$

Part-B**Unit-I**

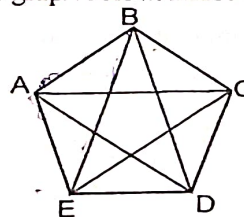
- Using Mathematical induction show that $\sum_{k=1}^n k^2 = \frac{n(n+1)(2n+1)}{6}$
- Find a Euler path or Euler circuit if it exists in each of three graph below. If not explain why?



G1



G2

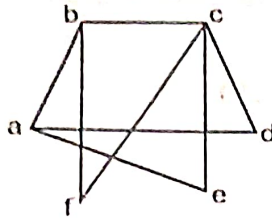


G3

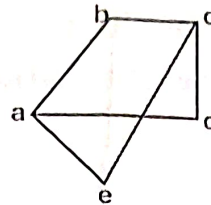


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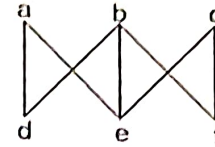
13. 6 determine which of the following graph are bipartite & which are not. If a graph is bipartite, state if is completely bipartite.



G1



G2



G3

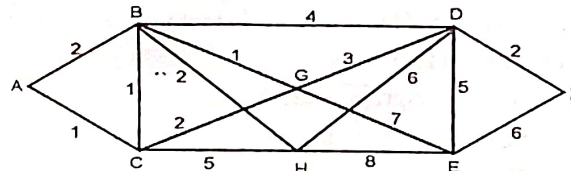
Unit-II

14. Show that $(p \rightarrow r) \wedge (q \rightarrow r)$ and $(p \vee q) \rightarrow r$ are logically equivalent.
15. Prove that $\sqrt{2}$ is irrational by giving a proof using contradiction.
16. What is the degree of a vertex in a graph? If a simple graph has 5 vertices and 4 edges, what is the maximum degree a vertex can have in this graph? Explain you reasoning.
17. Use mathematical induction to show that $1 + 2 + 2^2 + 2^3 + \dots + 2^n = 2^{n+1} - 1$

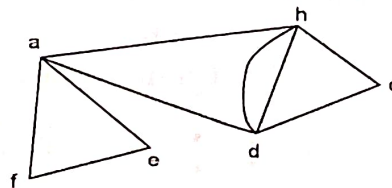
370

Unit-III

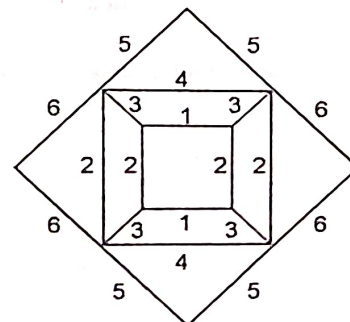
18. Use mathematical induction to show that $n^2 - 1$ is divisible by 8 whenever n is an odd positive integer.
19. Apply Dijkstra's Algorithm Or Improved version of Dijkstra's Algorithm to find a shortest path from A to F. Also write steps wherever possible.



In the pseudograph given below either describe an eulerian circuit or explain why no Eulerian circuit exists.



20. Write and apply Kruskal's algorithm to determine a minimum spanning tree for the weighted graph as shown below.



379



6463

**Bachelor of Computer Applications (BCA)
(Part-I) (Semester-II) Examination, 2025
DSCC-BCA-203
(Data Structure Using C++)**

Duration of Examination: 3 Hours
परीक्षा की अवधि: 3 घण्टा

Max. Marks: 70
पूर्णांक: 70

Note:- The question paper is divided into 02 Parts: Part - A & Part-B.

Part-A

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Part-B

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430

Part-A

1. What is a static data member in C++? How is it different from non static data members?
2. What is function prototyping in C++? Explain with an example.
3. Write a C++ program to implement call by reference.
4. Define operator overloading. Provide an example of overloading the "+" operator.
5. What is the scope resolution operator in C++? Provide an example of its usage.
6. Explain the concept of copy constructor in C++ with an example.
7. What is passing objects to function? Write a C++ program that demonstrates this concept.
8. Define recursion. Write a C++ program to compute fibonacci numbers using recursion.
9. Explain the concept of arrays and pointers in C++. How are they related?
10. What is inheritance in C++? Provide an example of single inheritance.

Part-B

Unit-I

11. Write a C++ program to implement linear search and explain its time complexity.
12. Write a C++ program to implement insertion and deletion operations in a singly linked list.
13. Write a C++ program to demonstrate doubly linked list traversal.



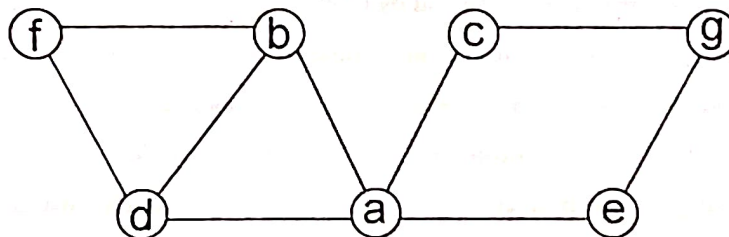
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Unit-II
400

14. ✓ Write a C++ program to implement a stack using arrays. Perform push and pop operations.
15. Write a C++ program to implement Queue using linked list. Demonstrate enqueue and dequeue operations.
16. Explain binary tree traversal (Inorder, Preorder, Post order). Write a C++ program for in order traversal of a binary tree.

Unit-III
420

17. Write a C++ program to implement binary search tree. Include operations for search, insertion and deletion.
18. ✓ Implement merge sort in C++ and explain how the algorithm works.
19. Write a function to evaluate the postfix expression. Illustrate the same for the given postfix expression.
ABC=D*+E\$F+ and assume A=6, B=3, C=2, D=5, E=1 and F=7.
20. ✓ Design an algorithm to traverse a graph using depth first search (DFS)
Apply DFS for the graph given below:



* * * * *