K22U 0343

Reg. No. : .....

Name : .....

VI Semester B.C.A. Degree (CBCSS – OBE – Regular) Examination, April 2022
(2019 Admission)
Core Course
6B17BCA : DESIGN AND ANALYSIS OF ALGORITHM

Time : 3 Hours Max. Marks : 40

PART – A
Short Answer

Answer **all** questions : **(6×1=6)**

1. Define Algorithm.
2. How many multiplications are used in Strassen's Matrix Multiplication algorithm ?
3. Which method is used for 8 queen's problem ?
4. What do you mean by best case of an algorithm ?
5. What is the time complexity of Prim's algorithm ?
6. Define backtracking.

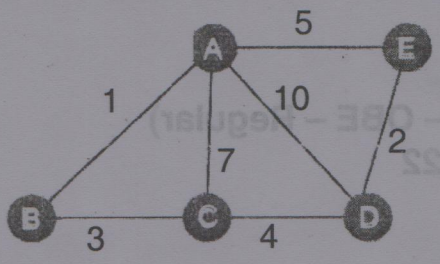
PART – B
Short Essay

Answer **any 6** questions : **(6×2=12)**

7. What are average case and worst-case analysis of an algorithm ?
8. Define Iteration method for solving a recurrence.
9. Write down algorithm for Binary search.
10. Explain any one sorting algorithm to sort an array.
11. What is the importance of algorithm analysis ?
12. Define Big oh notation.

P.T.O.

13. Calculate the cost of MST of the given graph using Kruskal's algorithm.



14. Write down Prim's algorithm.

PART – C
Essay

Answer **any 4** questions : **(4×3=12)**

15. What are the steps in developing algorithm ?
16. Explain Pseudo code method of specifying an algorithm with example.
17. What is greedy algorithm ? Explain with one example.
18. What is time complexity of an algorithm ?
19. Explain problem solving using master's theorem.
20. What is Huffman coding ? Explain.

PART – D
Long Essay

Answer **any 2** questions : **(2×5=10)**

21. Explain Divide and Conquer approach of an algorithm.
22. Explain Asymptotic Notations.
23. What is Recurrence Relation ? Explain Substitution method for solving recurrence with example.
24. Explain Strassen's Matrix Multiplication.

K22U 0344

Reg. No. : .....

Name : .....

VI Semester B.C.A. Degree (CBCSS-OBE-Regular) Examination, April 2022
(2019 Admission)
Core Course
6B18BCA : INTRODUCTION TO COMPILER

Time : 3 Hours Max. Marks : 40

SECTION – A **(Very Short Answer)**

Answer **all** the questions. **(6×1=6)**

1. What is the major difference between single pass and multi-pass compiler ?
2. List out the different phases of compilation.
3. What is a token in lexical analysis ?
4. When is a grammar said to be ambiguous ?
5. What is a left-recursive grammar ? Specify the context and reason for its elimination.
6. Mention the different possible operations on languages.

SECTION – B **(Short Answer)**

Write short notes on **any six** of the following questions. **(6×2=12)**

7. Differentiate between a compiler and an interpreter.
8. Discuss briefly about Symbol Table.
9. Explain briefly the terms alphabet, string and language in grammars.
10. What is a parse tree ? Draw an example.
11. Elaborate on the different forms of type checking.
12. What is a calling sequence and return sequence in the context of procedure calls ?
13. What is a dead-code ? Mention a method used for its elimination.
14. What are the conditions to be satisfied for a block to be a basic block ?

P.T.O.

SECTION – C **(Essay)**

Answer **any four** of the following questions. **(4×3=12)**

15. Explain briefly about any three major components in a language processing system.

16. Which are the major two parts of compilation process, explain and mention the phases coming under each part ?

17. Explain the structure and use of a transition diagram with an example.

18. Define and detail on Context-free Grammar with an example.

19. In the context of intermediate code generation, discuss on Directed Acyclic Graphs (DAG) and its major difference with syntax trees.

20. Discuss briefly about data-flow schema "Reaching Definitions" ?

SECTION – D **(Long Essay)**

Write an essay on **any two** of the following questions. **(2×5=10)**

21. Explain in detail about regular expressions for specifying token patterns with a suitable example.

22. Elaborate on the various Error-Recovery strategies in a parser.

23. Discuss in detail about the different representations of three-address instructions.

24. Explain in detail the general structure of an activation record.

———————

K22U 0345

Reg. No. : .....

Name : .....

VI Semester B.C.A. Degree (CBCSS – OBE – Regular) Examination, April 2022
(2019 Admission)
Core Course
6B19 BCA : DATA COMMUNICATION AND NETWORKS

Time : 3 Hours Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions : **(6×1=6)**

1. Expand LAN and WAN.
2. Define Computer Network.
3. What is framing ?
4. What is a datagram in network communication ?
5. Define cryptography.
6. What is Hamming Code ?

PART – B
(Short Essay)

Answer **any 6** questions : **(6×2=12)**

7. What is point to point and multipoint Line Configuration ?
8. List the advantages and disadvantages of mesh topology.
9. Write short note on bit stuffing.
10. What are the functions of Physical Layer ?
11. Differentiate Adaptive and Non-Adaptive Routing.

P.T.O.

12. What are the causes of Congestion in networks ?

13. What is symmetric and asymmetric key cryptography ?

14. Explain the three-way handshaking method for connection establishment.

PART – C
(Essay)

Answer **any 4** questions : **(4×3=12)**

15. Explain the Guided transmission mediums : coaxial cable and twisted pair cables.

16. Discuss Synchronous and asynchronous transmission.

17. Write note on Simplex Stop and Wait Protocol.

18. Explain in detail about flow based and hierarchal routing.

19. Discuss the functions and design issues of Transport Layer.

20. Write note on DES Chaining.

PART – D
(Long Essay)

Answer **any 2** questions : **(2×5=10)**

21. Explain in detail about OSI Reference Model.

22. Discuss in detail about the congestion control algorithms (Leaky Bucket and Token Bucket).

23. Explain in detail and compare the transport layer protocols TCP and UDP.

24. Write and Explain the working of the RSA Algorithm.

———————

Reg. No. : ....

Name : ....

K22U 0346

VI Semester B.C.A. Degree (CBCSS – OBE – Regular) Examination, April 2022
(2019 Admission)
Core Course
Discipline Specific Elective
6B20BCA-E01 : DATA MINING AND DATA WAREHOUSING

Time : 3 Hours Max. Marks : 40

PART – A
(Short Answer)

Answer **all** questions : **(6×1=6)**

1. What is Data mining ?
2. Expand OLAP.
3. What is a Decision Tree ?
4. Expand ID3.
5. What is KDD ?
6. List any two advantages of Data Warehouses.

PART – B
(Short Essay)

Answer **any 6** questions : **(6×2=12)**

7. What is Web Mining ?
8. What is CLARA ?
9. What are frequent itemsets ?
10. Define support in Association rules.

P.T.O.

11. Give four application areas of Data Mining.

12. What is Data Preprocessing ?

13. What is a Data Warehouse ?

14. How does Pincer Search overcome the disadvantage of Apriori algorithm ?

PART – C
(Essay)

Answer **any 4** questions : **(4×3=12)**

15. What is Data Visualization ?

16. Explain about Spatial Mining.

17. What are partitioning algorithms ?

18. Explain hierarchical clustering.

19. Explain the limitations of the Apriori algorithm.

20. Describe briefly the stages of KDD.

PART – D
(Long Essay)

Answer **any 2** questions : **(2×5=10)**

21. Explain the *k*-Medoid algorithm.

22. Describe briefly the C4.5 algorithm. How does it differ from ID3 ?

23. Discuss the challenges faced in Data Mining.

24. Explain the various OLAP operations.
