



SPDCA101-PROBLEM SOLVING AND PROGRAMMING

ASSIGNMENT – I 5 X 3 =15 Marks

1. Describe data types in C.
2. What is purpose of while statement. When is logical expression evaluated? What is difference between while and do-while.
3. What is an array? What are advantages of using array?
Write a program to sort an array?
4. Write a program to calculate sum of integers from 1 to 300 that are divisible by 5.
5. Describe logical bitwise operators. What is purpose of each? Write a C program to shift right the given member 7 times and print result each time.

ASSIGNMENT – II 5 X 3 =15 Marks

6. Define a structure? Explain advantages of structure. How union differs from structure.
7. Explain need for pointer variable. How pointer is initialized. Write a program to read numbers of an array & print in reverse them.
8. What are advantages of function? Summarize rules associated with function proto types.

9. Describe ways in which a file can be accessed. Write a C Program that displays contents of file.
10. Describe multidimensional arrays and how they are initialized.

SPDCA102-DISCRETE MATHEMATICS

ASSIGNMENT – I 5 X 3 =15 Marks

1. Show that $(\neg P \wedge (\neg Q \wedge R)) \vee (Q \wedge R) \vee (P \wedge R) \Leftrightarrow R$.
2. Show that $R \rightarrow S$ can be derived from the premises $P \rightarrow (Q \rightarrow S)$, $\neg R \vee P$, and Q .
3. Obtain the principal conjunctive normal form of $(\neg P \rightarrow R) \wedge (Q \leftrightarrow P)$
4. Let $X = \{1,2,\dots,7\}$ and $R = \{ (x, y) / x-y \text{ is divisible by } 3\}$. Show that R is an equivalence relation. Draw the graph of R .
5. Find the number of mathematics students at a college taking at least one of the language French, German, and Russian given the following data :
65 study French, 45 study German, 42 study Russian, 20 study French and German, 25 study French and Russian, 15 study German and Russian, 8 study all three languages.

ASSIGNMENT – II 5 X 3 =15 Marks

6. Solve the recurrence relation $S(k) + 3 S(k-1) - 4 S(k-2) = 0$, $k \geq 2$ with $S(0) = 3$, $S(1) = -2$.
7. Solve $T(k) - 7 T(k-1) + 10 T(k-2) = 6+8k$ with $T(0) = 1$ and $T(1) = 2$.
8. Solve the recurrence relation $S(n) - 2 S(n-1) = 3 S(n-2)$, $n \geq 2$, with $S(0) = 3$, $S(1) = 1$ by finding the generating function.

9. Prove that a finite connected graph is Eulerian if and only if each vertex has even degree.
10. State and prove Euler's formula in a connected planar graph.

SPDCA103-COMPUTER ORGANIZATION

ASSIGNMENT – I 5 X 3 =15 Marks

1. Explain the timing & control of a basic computer.
2. Write a note arithmetic micro operating.
3. Explain various types of instruction formats.
4. Explain the design of control unit.
5. Explain about general register organization.

ASSIGNMENT – II 5 X 3 =15 Marks

6. Explain about decoder – Draw a 2 to 4 line decode.
7. Design a 40bit ripple counter with 'D' Flip flops.
8. Explain various types of auxiliary memories.
9. Write a note on Micro program sequencer.
10. Explain about various types of auxiliary memories.

SPDCA104-DATA STRUCTURES

ASSIGNMENT – I 5 X 3 =15 Marks

1. Define algorithm and discuss the Asymptotic Notation.
2. Explain the addition of 2 polynomials using arrays.
3. a) Reverse the elements in a linked list.
b) Delete an element after a given position in a doubly linked list.
4. Write an algorithm to give the operations of circular queue.
5. a) Discuss about tree traversals and write non recursive algorithm of inorder tree traversal.

- b) Discuss the advantages of linked list over arrays.

ASSIGNMENT – II 5 X 3 =15 Marks

6. Discuss about tree traversals and write non recursive algorithm of inorder tree traversal.
7. Write an algorithm to delete a node in a binary search tree.
8. Explain about minimum cost spanning tree. Give the algorithms for finding minimum cost spanning tree. Give an example to differentiate the algorithms.
9. a) Explain binary search.
b) What is strongly connected component of a graph?
10. Explain Merge sort with an example. Give its algorithm.

SPDCA105 DATABASEMANAGEMENT SYSTEMS

ASSIGNMENT – I 5 X 3 =15 Marks

1. Discuss the advantages of database approach over traditional file based system.
2. Briefly explain the components of database manager.
3. Describe relational model and its advantages.
4. Discuss the concept of functional dependency, database referential integrity constraints.
5. What is SQL? Explain how to create, modify and delete database scheme objects.

ASSIGNMENT – II 5 X 3 =15 Marks

6. Define the term transaction and concurrent transactions?
7. Describe the principles of locking and serializability.
8. What is recovery? Briefly explain recovery techniques.
9. Explain security and integrity.

10. Dofferemtoate DDBMS and conventional DMBS.

SPDCA106 COMMUNICATION SKILLS

ASSIGNMENT – I 5 X 3 =15 Marks

1. Distinguish between the formal and informal channels of communication? Why is it necessary for an organization to have informal channel of communication?
2. Discuss merits and demerits of Telephone communication? How can it be effectively used?
3. What are the various semantic barriers of communication and how does language acts as a barrier to effective communication?
4. What is Memo? When is it used? Discuss its advantages and draft a specimen memorandum asking for explanation for not attending the duty?
5. What is negotiation? What is the process involved in an effective negotiation?

ASSIGNMENT – II 5 X 3 =15 Marks

6. What is non verbal communication? Elucidate various types of non verbal cues in communication?
7. What do you mean by minutes of the meeting? Enumerate the steps involved in planning, conducting and concluding the meetings?
8. In what ways can visual aids suggest better information? What precautions should be taken to avoid misinterpretation in such communication?
9. Draft a covering letter and curriculum vitae for the following advertisement.

Applications are invited on direct recruitment/contract basis for filling up of the Assistant manager TIFAC (an autonomous organization under the Department of Science & Technology). The candidate should possess MCA Degree from a recognized university with 5 years experience in establishment matters. The filled in applications should reach the Registrar , Technology Information, Forecasting assessment council Vishwakarma Bhawan, First Floor, Shaheed Jeet Singh Marg, New Delhi- 110016 with in thirty days as it was published in Employment news.

10. What are the key factors in making successful sales presentations?

NOTE:

- 1) **Last date for submission of assignments for all the courses / papers is- 15-10-2017**
- 2) **Non-submission of assignments as per the scheduled date mentioned above attracts a fine of Rs. 200/- upto 31-10-2017 per each assignment of a course / paper and under any circumstances the assignments will not be accepted from 1st November, 2017.**
- 3) **Assignments are to be written in the Book-lets provided by CDL and other formats are not accepted.**
- 4) **Answer all 10 questions, in a single book only.**