

# Computer Science

## NEW SYLLABUS

Full-Marks: 100 (75T+25P)

Teaching hours: 150

### I. Introduction:

Information Technology has become a part of contemporary society and as a potential tool in the socio-economic development of country. As Information technology manpower is the backbone for the rapid development of ICT sector in the country, government of Nepal has accordingly identified IT as a priority sector. Keeping in view the importance of computer technology in general and indispensability of its knowledge and skill to the society in general and to the students of higher secondary level in particular, the course seeks to introduce computer science to acquaint the learner with the basic skills of computer literacy.

### II. General Objective:

The general objectives of its course are to:

1. help establish a strong foundation for the development of internationally competent Human Resources in the field of Information Communication and Technology;
2. help decrease the Digital Divide; and
3. fulfill the middle level ICT Human Resources.

### III. Specific Objective:

After completing this course, the student will be able to:

1. state the fundamental principle of computer system mechanism and information technology;
2. identify computer recourse for any specific purpose PC based application in the real life situations;
3. solve the office automation related system problems, general networking problems, and web site design;
4. provide computing knowledge and skill to individuals or organization;
5. engage in higher study of computer science and information technological course in the country or abroad;
6. provide the services as instructor of computer sciences course in schools or institutions;
7. discuss programming tool technique and concept about database and C programming;
8. discuss the state-of-art information technology and works to change agents for spreading ICT culture in their society; and
9. encourage the students to visit the hardware and software industries, e-communities centers.

### IV. Course Contents:

#### UNIT 1: SYSTEM DEVELOPMENT CONCEPT

- 1.1 Introduction: System, Information System
- 1.2 Types of Information System
- 1.3 System Analyst - roles, responsibilities and characteristics
- 1.4 System development Life Cycle (SDLC)
- 1.5 Importance and the necessity of SDLC
- 1.6 System Development Models: Waterfall, Prototype, Spiral
- 1.7 System Development Phase
  - 1.7.1 System Study
  - 1.7.2 System Analysis Feasibility Analysis
  - 1.7.3 Feasibility Study: Technical, Economical, Operational
  - 1.7.4 System Design
  - 1.7.5 System Development
  - 1.7.6 System Testing
  - 1.7.7 Implementation
  - 1.7.8 Maintenance and Reviews

- 1.8 Concept of System Design Tools (Context Diagram, DFD, E-R Diagram, System Flow Chart, Decision Table, Decision Tree, Use Case, UML)
- 1.9 Case Study

## UNIT 2: DATABASE

- 2.1 Concept of Database
  - 2.1.1 Introduction: Data, Information, Database and DBMS
  - 2.1.2 Objectives of DBMS
  - 2.1.3 Database Model: Relational Model, Network Model, Hierarchical Model, Entity Relational Data Model
  - 2.1.4 Concept of Normalization
  - 2.1.5 Types of Normalization 1NF, 2NF, 3NF
  - 2.1.6 Structured Query Language
  - 2.1.7 Centralized Vs. Distributed Database
  - 2.1.8 Data Security
- 2.2 Design Database using DBMS Software
  - 2.2.1 Create a Database
  - 2.2.2 Create Tables and Fields and its properties
  - 2.2.3 Create a Relational Databases
  - 2.2.4 Create and Run Queries
  - 2.2.5 Working with Forms
  - 2.2.6 Generate Reports
  - 2.2.7 Formatting Forms and Reports
- 2.3 Project Work on DBMS Software

## UNIT 3: COMMUNICATION AND NETWORKING

- 3.1 Introduction: Definition, Purpose of networking
- 3.2 Analog and Digital Signal, Modulation (AM, FM, PM)
- 3.3 Direction of communication flow (Simplex, Halfduplex,)
- 3.4 Types of Network: Peer-to-peer and Client/Server, LAN, MAN and WAN
- 3.5 LAN Topologies: Bus, Star, Ring, Tree, Mesh Topologies (Its definition, structure, advantages & disadvantages)
- 3.6 Transmission Media: Bound Media (Coaxial Cable, Twisted Pair cable and Optical Fiber Cable - its description, structure, advantages and disadvantages), Unbound Media (Satellite, Wireless Media, Microwave Transmission)
- 3.7 Network Connecting Device: Modem, NIC, Switch / Hub, Router, Gateway, Repeater, Bluetooth, IR, WiFi
- 3.8 OSI Reference Model - Layer wise use and function
- 3.9 Communication Protocol: TCP/IP, SMTP, POP3, FTP, HTTPs, Telnet protocol
- 3.10 Demonstration of Communication Media and Connecting Devices

## UNIT 4: PROGRAMMING IN C

- 4.1 Introduction:
  - 4.1.1 Overview, History, Features, Advantages and Disadvantages of C Language
  - 4.1.2 Structure of C program
  - 4.1.3 Compiling Process
  - 4.1.4 C Pre-processor and Header Files
- 4.2 Fundamentals of C
  - 4.2.1 Character Set used in C
  - 4.2.2 Use of Comments
  - 4.2.3 Identifiers and Keywords and Tokens
  - 4.2.4 Data Types in C
  - 4.2.5 Constants and Variables
  - 4.2.6 Type of Specifier
  - 4.2.7 Statements - Simple and Compound Statements

- 4.3 Operators and Expressions
  - 4.3.1 Operators : Precedence & Associativity
  - 4.3.2 Expressions
  - 4.3.3 Type Casting and Conversions
  - 4.3.4 Introduction to Library Functions
- 4.4 Input/Output (I/O) Functions
- 4.5 Control Structures
  - 4.5.1 Decisions (if, if - else, else if, switch, ?; operator)
  - 4.5.2 Looping (while, do while, for)
- 4.6 Array and String
  - 4.6.1 Definition of array and string
  - 4.6.2 Types of Array - One-Dimensional and Two-Dimensional (definition, declaration, and initialization.)
  - 4.6.3 String Function : strlen(), strcat(), strcmp(), strcmp(), strcpy(), strlen(), strdup()
- 4.7 Functions
  - 4.7.1 Concept of Function, function definition, function prototype
  - 4.7.2 Return and Void statements of a function
  - 4.7.3 Accessing a Function - Function Call (by value, by reference)
  - 4.7.4 Concept of Recursion
- 4.8 Structures and Unions
  - 4.8.1 Definition and Difference between Structure and Union
  - 4.8.2 Structure: Declaration, Initialization and Size of Structure
- 4.9 Pointers
  - 4.9.1 Definition of Pointer
  - 4.9.2 Address (&) and indirection (\*) operator
  - 4.9.3 Pointer Expression and Assignment
- 4.10 Working with Files
- 4.11 Concept of Data File
- 4.12 Sequential and Random File
- 4.13 Opening, Reading, Writing and Appending on/from Data File

#### **UNIT 5: OBJECT-ORIENTED PROGRAMMING (OOP)**

- 5.1 Concept of OOP
- 5.2 Features of OOP: Class, Object, Polymorphism and Inheritance
- 5.3 Application of OOP
- 5.4 Difference between OOP and Structured Programming Language

#### **UNIT 6: INFORMATION COMMUNICATION TECHNOLOGY AND CYBER LAW**

- 6.1 Social Impact of the ICT
- 6.2 Digital Divide
- 6.3 Computer Ethics
- 6.4 Intellectual Properties Right
- 6.5 Privacy, Anonymity
- 6.6 Computer Crime
- 6.7 Concept of Cyber Law
- 6.8 Area of Cyber Law
- 6.9 Cyber Law in Nepal
- 6.10 IT Policy in Nepal

#### **UNIT 7: MULTIMEDIA**

- 7.1 Introduction to Multimedia
- 7.2 Component of Multimedia: Text, Graphics, Audio, Video and Animation
- 7.3 Application of Multimedia

**UNIT 8: ARTIFICIAL INTELLIGENCE**

- 8.1 Concept of AI
- 8.2 Component of AI
- 8.3 Uses of AI
- 8.4 Ethical Aspect of AI

**UNIT 9: CONTEMPORARY TECHNOLOGY**

- 9.1 e- Business
- 9.2 e-Learning
- 9.3 e-Governances
- 9.4 e-Medicine
- 9.5 Virtual Reality
- 9.6 Robotics

**UNIT 10: FINAL PROJECT WORK**

- 10.1 Project Synopsis of the Project
- 10.2 Project Development using C Programming
- 10.3 Project Report  
(Project should be assigned to individual students.)

**V. Instructional Materials:**

- To be guided by Teaching Manual

**VI. Instructional Techniques:**

- To be guided by Teaching Manual

**VII. Evaluation Schemes****Theory Evaluation:**

- Short Questions
- Long Questions
- Short Notes

Theory Questions are guided by marks distribution and model questions.

**Practical Evaluation**

S. No.	Unit	Topics	No of Exercise	Mini Projects Evaluation	Remarks
1	2.2	Database Management System	10	10	Practical Marks Evaluated by External Examiner: 10 Internal Examiner: 15 Based on Mini Project, Lab, Exercise and Final Projects
2	3.10	Networking	2		
3	4	C programming Language	30	15	
4	10	Final Project			

Lab exercises are guided by marks distribution and Teaching Manual.

**VIII. Marks and hours distribution**

Units	Mark Distribution		Number of Hours	
	Theory	Practical	Theory	Practical
1	10		15	
2	15	10	15	15
3	10		15	3
4	25	15	30	30
5	3		6	
6	3		6	
7	3		4	
8	2		3	
9	4		8	
10				
Total	75	25	102	48

## IX. Reference books:

- Gurung, J.B.; Baskota, A; Baral, D.S.; Baral, D.; Niroula, R.; Dhakal, T.P., **A Text Book on Computer Science Part-B**, Kathmandu: Bhundipuran Prakashan.
- Subba, B.R., **Computer Science Grade-XII**, Kathmandu: Taleju Prakashan.
- Baral, D.S.; Baral, D.; Ghimire; S.K. (2008), **The Secretes of C Programming Language**, Kathmandu: Bhundipuran Prakashan.
- Subba, B.R., **Computer Programming**, Kathmandu: Taleju Prakashan.
- Khanal, R. C. (2007), **Computer Concept for Grade XII**, Kathmandu: Ekata Publication.
- Pudasaini, D. Shakar; Adhikari, N., **A Text Book on Computer Science Grade XII**, Kathmandu: Buddha Academic Enterprises Pvt. Ltd.
- Balaguruswamy, E. (2000), **Programming in ANSI C, Second Edition**, Tata McGraw Hill Publishing Company.
- Gottfried, B.S. (2001), **Schaum's Outline Series for Programming with C, Second Edition**, Tata McGraw Hill Publishing Company.
- Yashavant, P. Kanetkar (2008), **Let Us C E/D**, BPB Publications.
- URL: <http://en.wikipedia.org/>

**MODEL QUESTIONS- 2067**

Time: 3 hours

Full Marks: 75

Pass Marks: 27

Candidates are required to give their answers in their own words as far as practicable.  
The figures in the margin indicate full marks.

**Group A (Long Answer Questions)**

Attempt any FOUR Questions.

[4×10= 40]

1. What is Entry-Relationship Data Model? Give an ER-diagram for a database showing fatherhood, motherhood and spouse relationship among men and women. [4+6]
2. The rate of interest offered by a bank on fixed deposit:
  - i. Period < 6 month 5%
  - ii. Period 6 to 12 month 6%
  - iii. Above 1 year 10%

Write a flowchart and program using C language to calculate monthly interest of customer.

[3+7]

3. Write a program that reads several different names and addresses into the computer, rearrange the names into alphabetical order. Make use of structure variables. [10]
4. Write a program that will read successive records from the new data file and display each record on the screen in an appropriately formatted form. [10]
5. Write a program with function and input menu from keyboard and activate these functions:
  - i. print a circle ()
  - ii. revere string ()

[10]

**Group B (Short Answer Questions)**

Attempt any SEVEN Questions.

[7×5= 35]

6. What is feasibility study? Why feasibility study is important in system analysis phase? Explain. [2+3]
7. What are the different types of LAN topology? Write merits and demerits of Star Topology. [2+3]
8. Write short notes on (any two):
  - (a) Coaxial cable (b) Fiber-Optic Cable (c) Switch
9. Differentiate between array and structure with suitable examples. [2.5+2.5]
10. What do you mean by parameter 'Passing by value' and 'Passing by reference' in C? Explain with suitable example. [2.5+2.5]

11. Explain the terms Polymorphism and inheritance. [2.5+2.5]
12. Describe the limitations of using *getchar()* and *putchar()* functions for reading strings. [2.5+2.5]
13. What do you understand by AI? How it may effect the society? [3+2]
14. Write short notes on (any two): [2.5+2.5]  
 (a) Cyber Law (b) Normalization (c) Context Diagram

## UNIT 1: SYSTEM DEVELOPMENT CONCEPT

### SHORT ANSWER QUESTIONS

1. 2073 Set C Q.No. 6  
 What are the major activities in SDLC with based on waterfall model? [5]
2. 2073 Set D Q.No. 7  
 Write the importance and necessity of SDLC. [5]
3. 2072 Set C Q.No. 6  
 Describe SDLC with diagram. [5]
4. 2072 Set D Q.No. 6  
 Describe the components of feasibility study. [5]
5. 2072 Set D Q.No. 7  
 Who is system analyst? List out characteristics of system analyst. [1+4]
6. 2072 Set D Q.No. 8  
 Describe system flowchart with diagram. [5]
7. 2072 Set E Q.No. 6  
 What is feasibility study? Explain different levels of feasibility study. [2+3]
8. 2072 Set E Q.No. 9  
 What is E-R diagram? Explain the advantage of E-R diagram in system design, [1+4]
9. 2072 Set E Q.No. 13  
 Write the importance of SDLC. [5]
10. 2071 Supp Q.No. 6  
 What is feasibility study? Why it is necessary before designing a system? [2+3=5]
11. 2071 Supp Q.No. 11 OR  
 What is expert system? Explain the fields of expert system. [1+4]
12. 2071 Set C Q.No. 6  
 What is system analysis and design? Describe briefly. [5]
13. 2071 Set D Q.No. 6  
 Describe different levels of feasibility study. [5]
14. 2071 Set D Q.No. 7  
 Who is system analyst? List out the rolls of system analyst. [1+4]
15. 2070 Supp Q.No. 6  
 Explain SDLC with appropriate diagram. [5]
16. 2070 Set C Q.No. 6  
 What is feasibility study? Explain different levels of feasibility study. [1+4]
17. 2070 Set D Q.No. 6  
 What is system? Explain the basic elements of system. [1+4]
18. 2070 Set D Q.No. 7  
 Who is system analyst? List out roles of system analyst. [1+4]
19. 2069 Q.No. 6  
 Explain different stages of system development life cycle with clear figure. [5]

**20. 2068 Cancelled Q.No. 4**

What is feasibility study? Why feasibility study is important in system analysis phase? Explain. [2+5]

**21. 2068 Cancelled Q.No. 8**

Who is system analyst? Highlight the characteristics of a good analyst. [2+5]

**22. 2068 Cancelled Q.No. 10**

What are the documentation techniques? Explain with an example. [7]

**23. 2068 Q.No. 5**

What is feasibility study? Explain different levels of feasibility study. [2+5]

**24. 2068 Q.No. 7**

Define program logic. Explain different types of program logic tools. [2+5]

**25. 2068 Q.No. 8**

What is system analysis? What are the major objectives of system analysis? Explain. [2+5]

**26. 2067 Q.No. 4**

What is system analyst? Explain the major roles of system analyst. [(2+5) = 7]

**27. 2067 Q.No. 5**

What is feasibility study? Explain the different levels of feasibility study. [(2+5) = 7]

**28. 2066 Q.No. 5**

Explain about the system design methodologies. [7]

**29. 2066 Q.No. 8**

Explain about the importance of computer security in this knowledge based society. [7]

**30. 2066 Q.No. 9**

What are the different program logic tools? Explain about the decision table and decision tree with examples. [2+5]

**31. 2066 Q.No. 11**

Explain about the different testing techniques during the system development. [7]

**32. 2066 Supp Q.No. 4**

How can you test a newly developed system? Explain different types of testing techniques. [2+5]

**33. 2066 Supp Q.No. 8**

Differentiate between decision table and decision tree with example. [7]

**34. 2065 Q.No. 5**

Who is a system analyst? Explain the major role of system analyst. [2+5]

**35. 2065 Q.No. 10**

What is data security? How it can be implemented? [2+5]

**36. 2065 Q.No. 11**

What is documentation? Explain the importance of documentation in program designing. [2+5]

**37. 2064 Q.No. 6**

Who is system analyst? Explain the different stages of system development life cycle. [2+5]

**38. 2064 Q.No. 9**

What is feasibility study? Explain different levels of feasibility study. [2+5]

**39. 2064 Q.No. 11**

What do you mean by data security? Explain briefly the type of security methods normally adopted in computerized environment. [2+5]

**40. 2063 Q.No. 4**

What is system analysis? Explain the different steps of system development life cycle.

**41. 2063 Q.No. 11**

What are the different symbols used to construct a flow chart? Give brief explanation along with a neat diagram.

**42. 2062 Q.No. 4**

Who is a system analyst? Explain the major role of system analyst. [2+5]

43. 2062 Q.No. 5  
What is feasibility study? Explain the different levels of feasibility of study. [2+5]
44. 2062 Q.No. 11  
What is program logic? Explain the different types of program logic design tools. [2+5]
45. 2061 Q.No. 5  
Define feasibility study. Why feasibility study is important in system development process. Explain [2+5]
46. 2061 Q.No. 6  
What is data security? How is can be implemented? [3+4]
47. 2061 Q.No. 9  
What are the documentation techniques? Explain any three of them. [2.5+4.5]
48. 2060 Q.No. 4  
What do you mean by feasible study? Why is it necessary before designing a system? [4+3]
49. 2060 Q.No. 8  
What do you mean by program algorithm? Explain the aims of program design and building blocks of a structured programming [3+4]
50. 2059 Q.No. 9  
State the steps involved in system development cycle in chronological order. Explain data security laws. [5+2]
51. 2058 Q.No. 1  
What is the importance of Data flow diagrams in the S.D.L.C? What do you mean by the following terms (any two): [3+4]  
(a) Physical system (b) C.A.S.E (c) P.I.E.C.E.S (c) Feasibility Study
52. 2057 Q.No. 1  
Define the term system. List different stages of system development life cycle. Highlight the importance of the first two stages. [2+3+2]
53. 2057 Q.No. 2  
Who is systems analyst? Highlight the characteristics of a good analyst. [3+4]

**WRITE SHORT NOTES ON**

54. 2072 Set D Q.No. 15a  
Expert System [2.5]
55. 2072 Set E Q.No. 15b  
System security [2.5]
56. 2071 Set D Q.No. 15b/ 2070 Set D Q.No. 15 b  
Expert system.
57. 2067 Q.No. 7a/ 2063 Q.No. 12 (ii) / 2057 Q.No. 4(a)  
Data security. [5]
58. 2066 Supp Q.No. 12a  
System security
59. 2065 Q.No. 12 b / 2063 Q.No. 12 (i)  
Feasibility study [3.5]

**UNIT 2: DATABASE****LONG ANSWER QUESTIONS**

1. 2062 Q.No. 2 OR  
What do you understand by the term data integrity? Why it is an important thing to be considered while designing a database. State and describe different types of data integrity. [20]
2. 2059 Q.No. 2  
a. What do you understand by the term data integrity? Why is it important thing to be considered while designing a database? State and describe different types of data integrity. [5]  
b. What is data security? How it can be implemented? [5]



**SHORT ANSWER QUESTIONS**

3. 2073 Set C Q.No. 7  
What is DBMS? Explain data integrity with suitable example. [2+3]
4. 2073 Set C Q.No. 8  
Define DML and DDL with example. [3+2]
5. 2073 Set D Q.No. 8  
What is DBMS? Differentiate between centralized and distributed database. [2+3]
6. 2073 Set D Q.No. 9  
Explain Relational database model. [5]
7. 2072 Set C Q.No. 7  
Define DBMS. List out the objectives of DBMS. [1+4]
8. 2072 Set C Q.No. 8  
What is Relational database model? List the advantages and disadvantages of Relational database model. [1+4]
9. 2072 Set C Q.No. 9  
Describe the terms 'SQL' and 'DML'. [2.5+2.5]
10. 2072 Set D Q.No. 10  
Describe any two database model with diagram. [5]
11. 2072 Set E Q.No. 7  
What is normalization? Write the advantages of normalization. [2+3]
12. 2072 Set E Q.No. 14  
What is Ms-Access? What are the uses of Ms-Access? [2+3]
13. 2072 Set E Q.No. 14 OR  
What are the advantages of RDBMS. [5]
14. 2071 Supp Q.No. 8  
What is MS-Access? What are the basic components of micro-soft Access? List out. [1+4]
15. 2071 Supp Q.No. 10  
Who is database administrator? List the roles of database administrator. [1+4=5]
16. 2071 Set C Q.No. 7  
What is database? List out the advantages of Database Management System. [1+4=5]
17. 2071 Set C Q.No. 9  
Describe the centralized and distributed database systems. [5]
18. 2071 Set D Q.No. 8  
What is RDBMS? List out the function of RDBMS. [1+4]
19. 2070 Supp Q.No. 7  
Explain the database models with clear diagrams. [5]
20. 2070 Supp Q.No. 8  
What is DBMS? List out the functions of DBMS. [1+4]
21. 2070 Set C Q.No. 7  
What is Hierarchical database model? List out the advantages and disadvantages of Hierarchical database model. [1+4]
22. 2070 Set C Q.No. 9  
Explain the centralized and distributed database models. [2.5+2.5]
23. 2070 Set D Q.No. 8  
Differentiate between DBMS and RDBMS with examples. [2.5+2.5]
24. 2069 Q.No. 8  
What is database? List the major uses of database application software. [1+4]

25. 2069 Q.No. 9  
What is E-R diagram? Explain the advantages of E-R diagram in system design. [1+4]
26. 2069 Q.No. 10  
Explain the database model with suitable examples. [5]
27. 2068 Cancelled Q.No. 7  
Define the term RDBMS. State the guiding principles used in database design. [2+5]
28. 2068 Cancelled Q.No. 9  
What is data integrity? State and describe different types of data integrity. [2+5]
29. 2068 Cancelled Q.No. 11  
What is normalization? How it is used in data analysis? Explain. [2+5]
30. 2068 Q.No. 4  
What do you understand by the term data integrity? Why it is important in designing a database? [2+5]
31. 2068 Q.No. 9  
Explain the benefits of centralized database. [7]
32. 2067 Q.No. 8  
What is normalization? Explain the normalization process with examples. [2+5 = 7]
33. 2067 Q.No. 11  
What do you understand by the term data integrity? Why it is important thing to be considered while designing a database? Explain [2+5 = 7]
34. 2066 Q.No. 7  
Define database and DBMS. Explain the advantages of Database system over flat-file system. [2+5]
35. 2066 Q.No. 10  
What are the advantages of distributed database system over centralized database system? [7]
36. 2066 Supp Q.No. 6  
What is data model? Explain about different data modeling techniques. [2+5]
37. 2066 Supp Q.No. 10  
What is the purpose of E-R diagram? List out the different symbols used in E-R diagram with their meanings and examples. [7]
38. 2065 Q.No. 6  
What is normalization? Explain the normalization process with example. [2+5]
39. 2064 Q.No. 4  
Differentiate between database and database management system. Explain the top down methodology of database design. [3+4]
40. 2064 Q.No. 8  
Explain the benefits of centralized database. What are the major responsibilities of a Database Administrator? Explain in detail. [3+4]
41. 2063 Q.No. 6  
Define database administrator. Explain the duties and responsibilities of a database administrator. [3+4]
42. 2063 Q.No. 8  
What is normalization? Explain the normalization process with examples. [2+5]
43. 2061 Q.No. 4  
Who is database administrator? Explain the benefits of centralized database system. [3+4]
44. 2060 Q.No. 7  
Give two advantages of using a database rather than a number of separate files. What are major responsibilities of a database administrator? [3+4]
45. 2060 Q.No. 9  
Why is normalization needed? Explain normalization process with examples. [2+5]
46. 2059 Q.No. 4  
Differentiate between Database and DBMS. Explain the top down methodology of Database design. [3+4]

**47. 2059 Q.No. 11**

Explain the benefits of Centralized Database. What are major responsibilities of a Database Administer? What are the objectives of system analysis? [2+3+2]

**48. 2058 Q.No. 2**

Name the different models of DBMS. Write short notes on any three of the following: (a) SQL (b) Data Dictionary (c) ERD (d) DDL [1+6]

**49. 2058 Q.No. 3**

What are Domains and Tuples? What are the characteristics of a good data model? [2+5]

**50. 2058 Q.No. 8**

What is prototyping? Write short notes on any two of the following? [2+5]  
(i) Normalization of data (b) Data security (c) RDBMS

**51. 2058 Q.No. 9**

What is the role of Database Administrator? What are the duties and responsibilities of a System Analyst? [2+5]

**52. 2057 Q.No. 3**

Define the term RDMBS. State the four guiding principles used in database design.

**WRITE SHORT NOTES ON****53. 2073 Set C Q.No. 15a**

DBMS [2.5]

**54. 2073 Set D Q.No. 15b**

Normalization [2.5]

**55. 2071 Supp Q.No. 15(ii)**

Data security

**56. 2071 Set C Q.No. 15 b / 2070 Set D Q.No. 15 a / 2064 Q.No. 12 b / 2062 Q.No. 12(c)**

Normalization [3.5]

**57. 2070 Set C Q.No. 15 b/2068 Q.No. 12a / 2057 Q.No. 7(a)**

Data dictionary [2.5]

**58. 2059 Q.No. 5(a)**

DML [3.5]

**59. 2057 Q.No. 4(c)**

Date modeling [3.5]

**60. 2057 Q.No. 4(b)**

Advantage of DBMS [3.5]

**UNIT 3: COMMUNICATION AND NETWORKING****SHORT ANSWER QUESTIONS****1. 2073 Set C Q.No. 9**

Describe the Bus and Star topology with suitable diagram. [2.5+2.5]

**2. 2073 Set C Q.No. 10**

Differentiate between guided and unguided networking media. [5]

**3. 2073 Set D Q.No. 6**

Who is system analyst? Explain the roles of system analyst. [1+4]

**4. 2073 Set D Q.No. 10**

Explain Bus and Star topology with advantages and disadvantages. [2.5+2.5]

**5. 2072 Set C Q.No. 10**

Define computer network and explain its uses. [2+3]

**6. 2072 Set C Q.No. 11**

Describe 'simplex', 'half duplex', and 'full duplex' with example. [1+2+2]

7. 2072 Set D Q.No. 9  
What is Networking? List the advantages of Networking. [1+4]
8. 2072 Set D Q.No. 11  
Describe Network topologies with diagram. [5]
9. 2072 Set E Q.No. 8  
What is computer network? Write the advantages and disadvantages of computer network. [1+4]
10. 2071 Supp Q.No. 7  
What is computer network? Explain its uses. [2+3=5]
11. 2071 Set C Q.No. 8  
What is Network topology? Describe any two network topologies with clear diagram. [1+4=5]
12. 2071 Set C Q.No. 10  
Describe the 'Coaxial cable' and 'Satellite' with examples. [2.5+2.5=5]
13. 2071 Set D Q.No. 10  
What is Network? List out the benefits of Networks? [1+4]
14. 2070 Supp Q.No. 9  
Define computer networks and explain their uses. [1+4]
15. 2070 Supp Q.No. 10  
Describe 'Simplex', 'half duplex' and 'full duplex' channel of communications with examples. [5]
16. 2070 Set C Q.No. 8  
What is Networking? List out the advantages and disadvantages of Networking. [1+4]
17. 2070 Set C Q.No. 10  
Explain any two transmission media with appropriate diagrams. [2.5+2.5]
18. 2070 Set D Q.No. 10  
Describe the types of network topologies with clear diagrams. [5]
19. 2069 Q.No. 7  
What are the types of LAN topologies? Explain with diagrams. [5]
20. 2068 Cancelled Q.No. 6  
What is local area network? Explain different types of topologies with diagrams. [2+5]
21. 2068 Q.No. 10  
What are the types of LAN topology? Explain with diagram. [7]
22. 2067 Q.No. 6  
What is network topology? Explain the different types of network topologies with diagram. [7]
23. 2067 Q.No. 10  
What is internet? Explain the uses of internet in business. [2+5]
24. 2066 Q.No. 4  
Define Network Architecture. Explain client-server and peer-to-peer networking. [2+5]
25. 2066 Q.No. 6  
Explain about OSI/ISO model of networking. [7]
26. 2066 Supp Q.No. 5  
What is the purpose of transmission media? Explain its types. [2+5]
27. 2065 Q.No. 4  
What is local area network? Explain the different types of topologies with diagrams. [2+5]
28. 2065 Q.No. 7  
Differentiate between internet and intranet with suitable example. [2+5]
29. 2064 Q.No. 10  
What is networking? Distinguish between star topology and ring topology of networking principles with the help of clean diagram. [2+5]

30. 2063 Q.No. 10  
What is networking? Explain the advantages and disadvantages of networking.
31. 2062 Q.No. 6  
What is local area network? Explain the different types of topologies with diagram. [2+5]
32. 2061 Q.No. 7  
What are the different types of LAN topology? Explain. [7]
33. 2060 Q.No. 5  
What is network topology? What are the different types of LAN topology? Explain. [3+4]
34. 2060 Q.No. 10  
What do you mean by transmission media? Write short notes on UTP cable and fibre optical cable. [3+2+2]
35. 2059 Q.No. 7  
Differentiate between Internet and intranet. Explain the term normalization in terms of database design. [5+2]
36. 2058 Q.No. 4  
What do you mean by topology? What do you understand by the following terms (any two):  
(a) Client-Server Network (b) Workstation (c) Protocol [1+6]
37. 2057 Q.No. 5  
What is a local area network? List the different types of topologies with diagrams. [2+5]
38. 2057 Q.No. 6  
What is internet? Explain the uses of internet in business.
- WRITE SHORT NOTES ON**
39. 2073 Set C Q.No. 15b  
Network protocols [2.5]
40. 2073 Set D Q.No. 15a  
WiFi [2.5]
41. 2072 Set E Q.No. 15a  
Satellite [2.5]
42. 2071 Supp Q.No. 15(i)  
Protocol [2.5]
43. 2069 Q.No. 15a/2067 Q.No. 12 a/2062 Q.No. 12(a)  
Coaxial Cable [2.5]
44. 2069 Q.No. 15b / 2067 Q.No. 12 b/2062 Q.No. 12(b)  
Satellite [2.5]
45. 2068 Cancelled Q.No. 12 b  
Packet switching [2.5]
46. 2066 Supp Q.No. 12b  
Network protocol. [3.5]
47. 2063 Q.No. 7  
(i) Client server network (ii) Workstation (iii) Protocol [5]
48. 2061 Q.No. 8(b)  
Fiber-optic Cable [5]
49. 2060 Q.No. 6(a)  
Internet. [5]
50. 2059 Q.No. 5(b)  
Bus-Topology [5]
51. 2059 Q.No. 5(c)  
Transmission media [5]

## UNIT 4: PROGRAMMING IN C

### LONG ANSWER QUESTIONS

1. 2073 Set C Q.No. 1

- a. Describe the switch statement with example. [5]  
 b. What are the difference between while and do while loop? Explain with syntax. [3+2]

2. 2073 Set C Q.No. 2

Write a program to read five positive number using array and find out the smallest among them. [10]

3. 2073 Set C Q.No. 3

- a. Describe the string manipulation function in C. Explain strcpy and strcmp with example. [2+3]  
 b. Write a program to demonstrate the value of variable and address of variable using pointer in C. [5]

4. 2073 Set C Q.No. 4

Describe the function in C. Write a program to find the sum of 'n' integer number using function in C. [4+6]

5. 2073 Set C Q.No. 5

Differentiate between structure and union. Write a program to input the employee name and post of five employees and display the records in proper format using structure. [3+7]

6. 2073 Set D Q.No. 1

- a. What is loop? Differentiate between while and do-while loop. Describe with example. [1+4]  
 b. Write a program to display first ten even nos. [5]

7. 2073 Set D Q.No. 2

What is string? Explain any four string handling functions with example. [2+8]

8. 2073 Set D Q.No. 3

What is array? Write a program to sort twenty integer nos. in ascending order. [2+8]

9. 2073 Set D Q.No. 4

- a. Write a program to add two integer nos. using function. [5]  
 b. Define simple and compound statements. Describe logical operator with example.

10. 2073 Set D Q.No. 5a

- a. What is pointer? Write its advantages. [5]  
 b. Write a program to enter name, post and salary of a employee and write it in a file "employee.dat."

11. 2072 Set C Q.No. 1

Write a program which find the sum, difference and product of 2 numbers using switch case statement. [10]

12. 2072 Set C Q.No. 2

- a. Differentiate between while and Do-while loop with appropriate example. [2.5+2.5]  
 b. Write a program to display the following: [5]

```
1
12
123
1234
12345
```

13. 2072 Set C Q.No. 3

Write a program which asks  $n^{\text{th}}$  terms of numbers and sort them in ascending order. [10]

14. 2072 Set C Q.No. 4

- a. What is function? List out the advantages of functions. [1+4]  
 b. Write a program to find the factorial of a given number. [5]

**15. 2072 Set C Q.No. 5**

- a. Describe fscanf and fprintf function. [5]  
 b. Write a program which asks name, age, roll-number of student and write it in a file student.dat. [5]

**16. 2072 Set D Q.No. 1**

- a. What is looping? Describe 'for' and while loop with appropriate examples. [1+2+2]  
 b. Write a program to check if a given number is odd or even using if statement. [5]

**17. 2072 Set D Q.No. 2**

Describe any five string handling functions with examples. [10]

**18. 2072 Set D Q.No. 3**

What is array? Write a program to find addition of two matrices (3 × 3). [2+8]

**19. 2072 Set D Q.No. 4**

- a. Differentiate between Structure and Union. [2+5 + 2.5]  
 b. Write a program to find greatest number among four numbers. [5]

**20. 2072 Set D Q.No. 5**

- a. Describe any two file handling functions. [2.5+2.5]  
 b. Write a program to display name, age and address reading from file "record.dat". [5]

**21. 2072 Set E Q.No. 1**

Differentiate between 'While' and 'do-while' loop. Write a program to display first 10 even numbers using loop. [5+5]

**22. 2072 Set E Q.No. 2**

What is an array? Write a program to enter 20 integer numbers into an array and display the greatest number entered. [3+7]

**23. 2072 Set E Q.No. 3**

What is a function? Write a function to add two integer number. [3+7]

**24. 2072 Set E Q.No. 4**

What is string? Describe any four string handling functions with examples. [2+8]

**25. 2072 Set E Q.No. 5**

Write a program which reads name, department and age from a file named "employed. dat" and display them on the monitor. [10]

**26. 2071 Supp Q.No. 1**

What are the data types available in C programming? Explain in detail with examples. [10]

**27. 2071 Supp Q.No. 2**

What is looping? Write a program to calculate and display the multiplication table using nested loop. [2+8=10]

**28. 2071 Supp Q.No. 3**

Describe the "strcat", "strcpy", "strncpy", "strlen" and "strrev" string functions with examples. [10]

**29. 2071 Supp Q.No. 4**

Write a program to arrange the elements of an array in ascending order. [10]

**30. 2071 Supp Q.No. 5**

What is "fscanf" function? Write a program to display name, age and address reading from a file named "record.dat". [2+8=10]

**31. 2071 Set C Q.No. 1**

What is function? Write a program to generate factorial of a given number using recursive function. [2+8]

**32. 2071 Set C Q.No. 2**

Describe any five 'file handling function' with examples. [10]

**33. 2071 Set C Q.No. 3**

What is looping? Describe 'for loop', 'while loop' and 'do-while loop' with appropriate examples. [1+5]

34. 2071 Set C Q.No. 4

Write a program which asks 100 numbers and sort them in ascending order. [10]

35. 2071 Set C Q.No. 5

Write a program to find greatest number among four numbers. [10]

36. 2071 Set D Q.No. 1

Write a program which reads name of 100 students and sort them in alphabetical order. [10]

37. 2071 Set D Q.No. 2

Describe 'Sequence', 'Selection' and 'Loop' with flowchart. Write a program to check if a number is odd or even. [6+4]

38. 2071 Set D Q.No. 3

What is pointer? Describe the benefits of pointer with examples. [4+6]

39. 2071 Set D Q.No. 4

What is an array? Write a program which finds multiplication table of two matrices (3×3). [2+8]

40. 2071 Set D Q.No. 5

Write a program which reads name, roll-number and age from a file named "student.dat" and display them. [10]

41. 2070 Supp Q.No. 1

Write a program which finds the sum, difference and product of 2 numbers using switch case statement. [10]

42. 2070 Supp Q.No. 2

Describe the types of loop with flowchart and examples. [10]

43. 2070 Supp Q.No. 3

Write a program which asks the user to input 'n' terms of number and find out the greatest and smallest number among those numbers. [10]

44. 2070 Supp Q.No. 4

Differentiate between array and structure with suitable examples. [5 + 5]

45. 2070 Supp Q.No. 5

Write a program which asks name, age, roll number of students and write them in a file "xyz.dat". [10]

46. 2070 Set C Q.No. 1

What is nested loop? Write a program to display the multiplication table of  $n^{\text{th}}$  terms of given numbers. [2+8]

47. 2070 Set C Q.No. 2

Describe any five "string handling functions" with examples. [10]

48. 2070 Set C Q.No. 3

Describe array, structure and pointer with examples. [10]

49. 2070 Set C Q.No. 4

Write a program which reads salary of 25 employees and count the number of employees who are getting salary between 30,000 to 40,000. [10]

50. 2070 Set C Q.No. 5

Describe fprintf and fscanf file handling-functions. Write a program which writes "welcome to Nepal" in a file. [10]

51. 2070 Set D Q.No. 1

What is control statement? Describe 'Sequence', 'Selection' and 'Loop' with flowchart and examples. [2+8]

52. 2070 Set D Q.No. 2

Write a program which reads name of 20 employees and sort them in alphabetical order. [10]

53. 2070 Set D Q.No. 3

Differentiate between structure and union with suitable examples. [5+5]



54. 2070 Set D Q.No. 4

What is recursion? Write a program to calculate factorial value of given number using recursive function. [2+8]

55. 2070 Set D Q.No. 5

Write a program which reads name, department and age from a file named "employee.dat" and display them. [10]

56. 2069 Q.No. 1

What is looping? Describe "for", "while" and "do-while" loops with appropriate examples. [1+9]

57. 2069 Q.No. 2

What is control statement? Write a program which selects and prints largest among 3 numbers using "if-else" statement with flow charts. [2+8]

58. 2069 Q.No. 3

What is string? Explain any four string handling functions with example. [2+8]

59. 2069 Q.No. 4

Write a program to add two matrices by supplying elements of matrices by the user. [10]

60. 2069 Q.No. 5

Write a program which reads name, department and age from a file named "employee.dat" and display the on the monitor. [10]

61. 2068 Q.No. 1

- What is an operator? Explain different types of operators used in programming with examples. [1+4]
- Define 'Nested Loop'. Write a program to calculate and display the multiplication table using nested loop. [2+3]
- Write a program to find out factorial of any number. [5]
- What do you mean by "local", "global" and "static" variables? Explain with examples. [5]

62. 2068 Q.No. 2

- What is an array? Write down the similarities and differences of array with pointer. [2+3+5]
- Write a program to read salaries of 300 employees and count the number of employees getting salary from 10,000 to 15,000. [10]

63. 2068 Q.No. 3

- Write program to sort an array of 'n' elements in descending order. [10]
- Write a program to enter "name", "roll-no" and "marks" of 10 students and store them in file. Read and display the same from the file. [10]

64. 2068 Cancelled Q.No. 1

- Explain data types used in programming with an example. [5]
- Write a program to read a line text and to convert it into uppercase. [5]
- Compare "While", "do-while" and "for" loops with an examples. [5]
- Write a program to find out whether it is an odd number or even number. [5]

65. 2068 Cancelled Q.No. 2

- What is recursive function? Write a program to calculate the factorial of an integer using recursion. [3+7]
- Define pointer. Discuss the relation between the pointer and array with suitable examples. [2+8]

66. 2068 Cancelled Q.No. 3

- Write a program to open a new file and read roll-no, name, address and phone number of students until the user says "no", after reading the data, write it to the file then display the content of the file. [10]
- Write a program to input names of 'n' numbers of students and sort them in alphabetical order. [10]

**67. 2067 Q.No. 1**

- What is looping? Write a program to print first 10<sup>th</sup> terms of the following series using for loop 1 5 9 13 ..... [2+3 = 5]
- Write a recursive function to calculate the factorial of any integer number. [5]
- Write a program to display all prime numbers from 1 to 100. [5]
- What do you mean by string manipulation? Explain about strcpy and strcat. [2+3 = 5]

**68. 2067 Q.No. 2**

- How do you declare an array? Write a program to arrange the elements of an array in ascending order. [3+7 = 10]
- What is the difference between library function and user-defined function? Write a program using user-defined function to calculate y raise to power x. [5+5 = 10]

**69. 2067 Q.No. 3**

- Differentiate between array and structure with suitable example. [10]
- Write a program to delete and rename the data file using removed and rename command. [10]

**70. 2066 Supp Q.No. 1**

- Draw a flowchart to check whether entered number is even or odd. Convert this flowchart into program. [5]
- Define keywords and variables with examples. [5]
- Write a program to find the factorial of an entered number (n). [5]
- Write a program to find the commission amount on the basis of sales amount as per the following conditions: [5]

<u>Sales amount (Rs.)</u>	<u>Commission</u>
0 - 1000	5%
1001 - 2000	10%
> 2000	12%

**71. 2066 Supp Q.No. 2**

- Write a program to store mark obtained by 'n' students and count the number of students who obtained mark greater than 70. Also count the number of students who are failed (mark < 35). List any five string functions. [10]
- Write a program to input a string and count the number of consonants containing in the string. [2+8]

**72. 2066 Supp Q.No. 3**

- Write a program to show data writing and reading operation to/from a data file. [2+8]
- Explain the importance of pointer in C-Programming. Illustrate pointer operations with examples. Show the relationship between array and pointers with example. [3+3+4]

**73. 2066 Q.No. 1**

- Write an algorithm for a program that input cost price (CP) and selling price (SP) and determines whether there is gain or loss. Convert this algorithm into program code. [5]
- Write a program to display the name of day on the basis of entered number 1 to 7. For example, 1 for Sunday. [5]
- Write a program to input an integer number and checks whether it is prime or not. [5]
- Explain data types used in C-programming with examples. [5]

**74. 2066 Q.No. 2**

- Write a program to store name and mark of 20 students. Sort the data according with mark in descending order and display them. [10]
- Write a program to find the sum of 'n' integer numbers using function. [10]

**75. 2066 Q.No. 3**

- Write a program to store std-no, name and mark of 'n' students in a data file. Display the records in appropriate format reading from the file. [10]
- Differentiate array and structure with examples. [10]

**76. 2065 Q.No. 1**

- Write an algorithm and a flow chart for a program that checks whether the number entered by user is exactly divisible by 5 but not by 11. [5]
- Write a program that reads three numbers and displays the largest among them. [5]
- What is an operator? Explain different types of operations used in programming. [2+3]
- Write a program to read a four digit number and display it in reverse order. [5]

**77. 2065 Q.No. 2**

- Write a program to add two matrices. [10]
- Write differences between structure and union with syntax. [10]

**78. 2065 Q.No. 3**

- Write a program to enter name, roll-number and marks of 10 students and store them in the file. [10]
- Write a program to enter 'n' numbers into one dimensional array and sort and display them in ascending order. [10]

**79. 2064 Q.No. 1**

- Differentiate between break and continue statements with examples. Write a program to print first 10 terms of any series using 'for' loop. [2+3]
- What is an operator? Explain assignment, Ternary, Comma operators with examples. [2+3]
- Write a program for reading a data file. [5]
- Write the advantages of function. Write a recursive function to calculate the factorial of any integer number. [2+3]

**80. 2064 Q.No. 2**

- Describe the importance of an array. Write a program to store ten different constant variables in an array and print out the greatest number. [3+7]
- Write a program that reads different names and addresses into the computer and sorts the names into alphabetical order using structure variables. [10]

**81. 2064 Q.No. 3**

- Write a program to delete and rename data file using remove and rename command. [10]
- Write a program to count the number of vowels and consonants in a given text. [10]

**82. 2063 Q.No. 1**

- What is looping? Write a C program to display the sum of 'n' terms of even numbers.
- Write a C program to calculate the factorial of a given number using functions.
- What is an operator? Describe different types of operators that are included in C.
- What are the differences between break and continue statement? Write a C program to print first 10 terms of the following series using FOR loop. 1, 5, 9, 13, ..... [20]

**83. 2063 Q.No. 2**

- What is an array? Write a C program to sort integer values in descending order. [10]
- Write a C program to read age of 40 students and count the number of students of the age between 15 and 22. [10]

**84. 2063 Q.No. 3**

- Differentiate between structures and pointers with examples. [10]
- Write a C program design a menubase system which has the following features: [10]  
(i) Appending record (ii) Reading record (iii) Delete record (iv) Quit

**85. 2062 Q.No. 1**

- Write a C program to print the 10 positive integers and their factorials. [5]
- Differentiate between while and Do while loop with suitable examples. [5]
- For any integer input through the keyboard, write a C program to find out whether it is an odd number or even number. [5]
- Write a C program to input 'n' numbers and find out greatest and smallest number. [5]

**86. 2062 Q.No. 2**

- Draw a flowchart and write a C program to read in a positive integer less than 20 and display its multiplication table. [10]
- Write a C program to input names of 'n' numbers of students and sort them in alphabetical order. [10]

**87. 2062 Q.No. 3**

- Write an algorithm and C program to read salaries of 200 employees and count the number of employees getting salary between 5,000 – 10,000. [10]
- Write a C program that will read successive records from the new data file and display each record on the screen in an appropriate format. [10]

**88. 2061 Q.No. 1**

- The marks obtained by a student in 7 different subjects are entered through the keyboard. The student gets a division as per the following rules. [10]
 

Percentage greater or equal to 60	first division
Percentage between 45 and 59	second division
Percentage between 35 and 44	third division
Percentage less than 35	fail
Mark less than 35 in a subject will be declared as	fail

 Write a program using C language to process result of all students based on the specification state above.
- Write a program that reads different names and addresses into the computer and rearrange the names into alphabetical order using the structure variables. [10]

**89. 2061 Q.No. 1(b)OR**

Describe either in flowchart or algorithm the steps required to display the multiplication table of a series of given numbers (entered by the user). Convert the flowchart or algorithm into program of any the 4GL or HLL of your choice. The program should use the 'For' looping structure in calculating and displaying the multiplication table. [20]

**90. 2061 Q.No. 2**

- Write a program using C language to read the age of 100 persons and count the number of persons in the age group between 50 and 60. Use 'For' and 'continue' statements. [10]
- Differentiate between while and do while loop. What are the advantages of object oriented programming over structured programming? [5+5]

**91. 2061 Q.No. 3**

- Write a program using C language that reads successive records from the new data file and display each record on the screen in an appropriate format. [10]
- What is pointer? Explain the meaning of each of the following declarations: [2.5+7.5]
  - int \*p;
  - int \*p[10];
  - int (\*) [10]
  - int \*p [void];
  - int \* P(char \*a);

**92. 2060 Q.No. 2**

- Write a program to store Kathmandu Valley's 7 days maximum and minimum temperature (in centigrade) and calculate average, maximum, minimum temperature using function and print 7 days temperature, maximum, minimum and average temperature using any high level programming language. [12]
- Write a algorithm to solve the above calculations [8]

**93. 2060 Q.No. 3**

- Write a programme to input a message from keyboard and display the menu. [5x4]
- Print the message length in term of characters.
  - Print the message in reverse order.
  - Print the message in capital letters.
  - Copy the message from one location of screen to another location.

**94. 2058 Q.No. 2**

Describe either in flowchart or algorithm form the steps required to display the multiplication table of a given number (inputted by the user). Convert this flowchart/ algorithm into program code of the 4GL or HLL of your choice. The program should used the 'FOR' looping structure to calculate and display the multiplication table. [10+10]

**95. 2058 Q.No. 3**

A higher secondary school has asked you to write a HLL program to help them analyze their class test scores. The program must firm ask for the number of students 'n' and should have a looping structure that loops through 'n' times to accept, valuable and store the data in any array. The structure for each student is given below:

Field name	field type	size	Validation rules
Roll	numeric	2,0	1-99
Name	alphabetic	25,0	
Marks	numeric	2,1	0.0-10.0

**The program must:**

- Print out the data for students who have failed (obtained marks < 4.0)
- Print out the data for students scoring more than 7.9.
- Print out the average class mark.

[10]

**96. 2057 Q.No. 2**

Write an algorithm and draw a flowchart to enter names of the students and ages of 10 different students in arrays, then arrange them in descending order according to the age and print them. [20]

**97. 2057 Q.No. 3**

An organization has 5 stores and it deals in items. The stock position of these items is shown below.

	Item 1	Item 2	Item 3	Item 4
Store 1	30	35	0	0
Store 2	20	0	25	0
Store 3	80	175	25	35
Store 4	0	21	32	28
Store 5	10	80	15	40

Develop a computer program in any of the high level language you are taught in your class, to input this table and to indicate the items that are completely out of stock at store *i*, where the value of *i* may be input from the keyboard.

Your program should also calculate the total stock of each item in the organization and also the stock in store number 5. [20]

**SHORT ANSWER QUESTIONS****98. 2073 Set C Q.No. 11**

What are variables in programming? List out the different data types in C program. [2+3]

**99. 2073 Set C Q.No. 12**

Describe the different mode of file handling concept in C. [5]

**100. 2072 Set C Q.No. 12**

Differentiate between array and structure with example. [5]

**101. 2072 Set E Q.No. 10**

What are the data types used in C programming? List out. [5]

**102. 2071 Supp Q.No. 8 OR**

What are operators used in C programming? Explain with examples. [5]

**103. 2071 Supp Q.No. 9**

Explain the array and structure with examples. [2.5+2.5=5]

**104. 2071 Set C Q.No. 11**

Describe the different data types which are used in C-programming. [5]

**105. 2071 Set D Q.No. 9**

Describe "Operators" which are used in C-programming. [5]

**106. 2070 Supp Q.No. 11**

What is operator? Describe the types of operators with appropriate examples. [1+4]

**107. 2070 Set C Q.No. 11**

Differentiate between "While" and "Do-While" loop with flowchart. [2.5+2.5]

**108. 2070 Set D Q.No. 9**

Describe the data types which are used in C programming. [5]

**109. 2069 Q.No. 8 Or**

Differentiate between array and structure. [5]

110. 2065 Q.No. 9  
Differentiate between while and do-while loop. [3.5+3.5]
111. 2062 Q.No. 9  
Describe the limitation of using getchar and putchar functions for reading strings. [7]
112. 2061 Q.No. 10  
Differentiate between array and structure [7]
113. 2059 Q.No. 10  
In event driven programming what is event handler? Explain the term 'recession'. [7]
114. 2059 Q.No. 12  
What is Program Logic? What are different tools to explain the logic and design of a program?  
What is infinite loop? What are symbols used to draw a flow chart? [1+3+1+2]

## UNIT 5: OBJECT-ORIENTED PROGRAMMING (OOP)

### SHORT ANSWER QUESTIONS

1. 2073 Set D Q.No. 11  
Explain class and object. [2.5+2.5]
2. 2072 Set D Q.No. 12  
What is OOP? List the characteristics of OOP. [1+4]
3. 2071 Supp Q.No. 14  
Explain the terms polymorphism and inheritance. [5]
4. 2071 Set C Q.No. 12  
What is OOP? List the advantages of OOP. [1+4=5]
5. 2071 Set D Q.No. 11  
Describe the importance of OOP. [5]
6. 2070 Supp Q.No. 12  
What is OOP? List out the advantages of OOP. [1+4]
7. 2070 Set C Q.No. 12  
What is procedural oriented programming? Explain. [5]
8. 2070 Set D Q.No. 11  
Explain polymorphism and inheritance with examples. [2.5+2.5]
9. 2069 Q.No. 14  
Write the advantages and disadvantages of OOP [5]
10. 2068 Cancelled Q.No. 5  
What is object-oriented programming? How it is different from the procedure oriented programming? [2+5]
11. 2068 Q.No. 6  
Why polymorphism and inheritance are important concepts of OOP? Explain. [7]
12. 2067 Q.No. 9  
Explain the terms polymorphism and inheritance. [7]
13. 2066 Supp Q.No. 11  
Explain the characteristics of objects oriented programming. [7]
14. 2065 Q.No. 8  
Define the terms polymorphism and inheritance with examples. [3.5+3.5]
15. 2063 Q.No. 5  
Explain the terms Polymorphism and Inheritance. [7]
16. 2062 Q.No. 8  
Why polymorphism and inheritance are important concepts of OOP? Explain. [7]

17. 2061 Q.No. 11

Explain the term Polymorphism and inheritance.

[7]

18. 2058 Q.No. 5

Name the tools that are used in program design. Polymorphism and Inheritance are important concepts of OOP. What do you understand by these two terms?

19. 2058 Q.No. 6

What is a Logical operator? Give two examples of their use. Compared to procedure-oriented programming what advantage does not events driven programming offer?

[3+4]

20. 2057 Q.No. 8

What is object-oriented programming? How is it different from the procedure oriented programming?

**WRITE SHORT NOTES ON:**

21. 2066 Q.No. 12 a

Inheritance

[3.5]

22. 2063 Q.No. 6(c)

Polymorphism

[5]

**UNIT 6: INFORMATION COMMUNICATION TECHNOLOGY AND CYBER LAW****SHORT ANSWER QUESTIONS**

1. 2073 Set C Q.No. 13

Describe the cyber crime in Nepal. What are protection method to the cybercrime?

[2+3]

2. 2071 Supp Q.No. 13

Write notes on: Digital divide and social impact of ICT.

[2.5+2.5=5]

3. 2071 Set D Q.No. 12

Describe Computer crime and its various forms.

[5]

4. 2070 Set D Q.No. 12

Describe computer crime and its various forms.

[1+4]

5. 2069 Q.No. 13

Define computer crime and its various forms.

[5]

6. 2066 Supp Q.No. 9

What is cyber crime? Explain its effects raised in this contemporary society.

[2+5]

7. 2062 Q.No. 10

What do you mean by IT? Explain the advantages and disadvantages of IT.

[2+5]

**WRITE SHORT NOTES ON**

8. 2072 Set C Q.No. 15a

Computer crime

[2.5]

9. 2072 Set C Q.No. 15b

Social impact of the ICT.

[2.5]

10. 2071 Set D Q.No. 15a / 2068 Q.No. 12b / 2064/2065 Q.No. 12 a / 2062 Q.No. 7(c) / 2060 Q.No. 6(c)

Cyber law

[3.5]

**UNIT 7: MULTIMEDIA****SHORT ANSWER QUESTIONS**

1. 2073 Set C Q.No. 14

What is multimedia? List out the component of multimedia.

[2+3]

2. 2073 Set D Q.No. 13

Explain the components of multimedia.

[5]

3. 2072 Set C Q.No. 14

Describe any five application of multimedia.

[5]

4. 2072 Set D Q.No. 13  
What is multimedia? List out the components of multimedia. [1+4]
5. 2072 Set E Q.No. 11  
What is multimedia? Explain. [1+4]
6. 2071 Supp Q.No. 12  
Define multimedia. List the advantages and disadvantages of multimedia. [1+4]
7. 2071 Set C Q.No. 14  
Describe the advantages of multimedia. [5]
8. 2071 Set D Q.No. 13  
What is multimedia? List out the advantages of multimedia. [1+4]
9. 2070 Supp Q.No. 13  
What is multimedia? List out the advantages of multimedia system. [1+4]
10. 2070 Set C Q.No. 14  
What are the components of multimedia? Explain. [5]
11. 2070 Set D Q.No. 13  
List out the advantages and disadvantages of multimedia. [5]
12. 2069 Q.No. 12  
What is multimedia? What are the components of multimedia? List out. [1+4]
13. 2064 Q.No. 7  
What is computer animation? How is it used in film making industry? [2+5]
14. 2063 Q.No. 9  
Define the term multimedia. Explain the application areas of multimedia.
15. 2060 Q.No. 12  
What is multimedia? Explain its application areas. [3+4]
16. 2057 Q.No. 9  
What is computer animation? How is it used on one film making industry? [3+4]

## UNIT 8: ARTIFICIAL INTELLIGENCE

### SHORT ANSWER QUESTIONS

1. 2073 Set D Q.No. 12  
What is AI? Explain cyber law. [2+3]
2. 2072 Set D Q.No. 14  
Describe applications of AI. [5]
3. 2072 Set E Q.No. 12  
What is AI? What are the uses of AI? [2+3]
4. 2071 Set C Q.No. 13  
Describe the application areas of AI. [5]
5. 2070 Supp Q.No. 14  
What is AI? Explain the application areas of AI. [1+4]
6. 2070 Set C Q.No. 13  
What is AI? Explain the application areas of AI. [1+4]
7. 2069 Q.No. 11 OR  
What is AI? Describe the application of AI. [5]
8. 2068 Q.No. 11  
What do you understand by AI? How it affects the modern society? [2+5]
9. 2064 Q.No. 5  
What do you understand by AI? How it affects the society? Explain the terms polymorphism and inheritance in terms of OOPs. [1+2+4]



10. 2061 Q.No. 12

What do you understand by AI? How it effects the modern society? [3+4]

11. 2059 Q.No. 8

What do you understand by AI? How it may affect the society? Explain the terms polymorphism and inheritance in terms of oops. [Note: From units 4 & 5] [2+2+3]

12. 2057 Q.No. 7

Who does an AI application work? Can a computer really think with the aid of AI?

**WRITE SHORT NOTES ON**

13. 2060 Q.No. 6(b)

Application of AI. [3.5]

**UNIT 9: CONTEMPORARY TECHNOLOGY****SHORT ANSWER QUESTIONS**

1. 2073 Set D Q.No. 14

Define the terms e-learning and virtual reality. [2.5+2.5]

2. 2072 Set C Q.No. 13

What is E-governance? List out the objectives of E-governance. [1+4]

3. 2072 Set E Q.No. 12 OR

Define the terms e-business and e-learning. [2.5+2.5]

4. 2071 Supp Q.No. 11

What is e-governance? List the importance of e-governance. [1+4]

5. 2071 Set D Q.No. 14

Describe the objectives of e-governance. [5]

6. 2070 Supp Q.No. 15

List out the advantages and disadvantages of e-business. [5]

7. 2070 Set D Q.No. 14

What are the objectives of e-governance? Explain. [5]

8. 2069 Q.No. 11

What are the key challenges of implementing e-governance in developing countries? [5]

9. 2066 Supp Q.No. 7

What is e-commerce? Explain its role to enhance the digital economy. [2+5]

10. 2060 Q.No. 11

What is e-commerce? Write impact of e-commerce technology in our society. [3+4]

11. 2058 Q.No. 7

What do you mean by 'e-commerce'? Distinguish between WWW (World Wide Web) and Internet? What is multimedia? What are the hardware devices required by a personal computer to make it 'multimedia capable'? [2+2+1+2]

**WRITE SHORT NOTES ON**

12. 2072 Set D Q.No. 15b

E-learning. [2.5]

13. 2071 Set C Q.No. 15 a / 2067 Q.No. 7b / 2066 Q.No. 12 a / 2063 Q.No. 12(iii)

E-commerce [2.5]

14. 2070 Set C Q.No. 15 a

E-learning [2.5]