Exam Code: 117901 **Paper Code: 1268**

Bachelor of Computer Applications - Semester I

Course Title: Introduction to Computer and Information Technology

Course Code: BCAL-1115

Time: 3 Hours **Max. Marks: 70**

Note: Attempt five questions, selecting one question from each section. The fifth question can be attempted from any section. Each question carries 14 marks.

SECTION A

Q1) Explain the main Components of a Computer System, explaining the function of each one.

Q2) What do you mean by Software? Explain various types of Software.

SECTION B

Q3) What are Printers? Explain different types of Printers.

Q4) Explain:-

(a) Ribbon (b) Quick Access Toolbar (c) Office button (d) Status bar

SECTION C

Q5) Explain:-

(a) Creation and working of Tables (b) Spellchecker

Q6) What do you know about Themes, Formatting and Multimedia in context to slides.

SECTION D

Q7) Explain different types of Graphs and the steps to create the graphs with examples.

Q.8. Discuss:-

(a) Data Sorting (b) Filtering the data (c) Auto calculate (d) Date functions

Paper Code: 1270

Programme	Course Code	Exam Code
Bachelor of Computer Applications Semester I	BCAL-1113	117901
Bachelor of Science (Information Technology) Semester I	BITL-1113	118001

Course Title: Digital Electronics

Time Allowed: 3 Hours **Max. Marks: 70**

Note: Attempt five questions, selecting one question from each section. The fifth question may be attempted from any section. All questions carry 14 marks. Use of Simple calculator is allowed.

(Section A)

Q1) a) $(6B)_{16} = (?)_8$

b) $(101110010110)_2 = (?)_{\text{Gray Code}}$

c) $(78.125)_{10} = (?)_2$

d) $(172.5)_8 = (?)_{10}$

Q2) a) subtract 10100101 from 10011010 using 2's complement subtraction method.

b) How two BCD digits are added? Explain with an example.

c) Represent $-(47)_{10}$ in 8-bit 2's Complement Representation.

d) What do you mean by non-weighted number system? Explain with an example.

(Section B)

Q3) a) Why NOR gate is termed as universal gate? Explain in detail.

b) Minimize F(A,B,C,D) = Π(0,4,8,12). Also draw the Boolean circuit of minimized expression.

Q4) a) Minimize F $= A\bar{B}C + \overline{A}BC + \overline{\overline{AB} + C}$. Also draw the Boolean circuit of minimized expression.

b) State and prove distributive law of Boolean algebra.

(Section C)

Q5) a) What do you mean by Priority encoder? Explain with an example.

b) What is full subtractor? Explain its truth table and internal structure.

Q6) We need to derive a main memory of size 256 X 4 from chips of size 128 X 1.

a) How many chips will be needed to build main memory?
b) How many chip select lines are used?
c) What will be the size of decoder?
d) Draw the memory interconnections.

(Section D)

Q7) a) Explain the working of JK flip-flop with truth and excitation table.
b) Explain timing diagram of T-flip flop for different operations.

Q8) a) What do you mean by SIPO registers? Explain.
b) Explain the working of Modulo-16 Counter in detail.

Paper Code: 1271
(100)

Programme: Bachelor of Science (Information Technology)
Semester-I
Exam Code: 118001
Course Code: BITL-1114

Programme: Bachelor of Computer Applications
Semester-I
Exam Code: 117901
Course Code: BCAL-1114

Course Title: Introduction to Programming – C

Time Allowed: 3 Hours **Max Marks: 70**

Note: Attempt five questions. Each question carries equal 14 marks. Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

SECTION-A

1. Write a note on the following: (4x3.5=14)
   a. Symbolic Constants
   b. Variables
   c. Character Set
   d. Expression

2. What is the data type? Explain basic and derived data types with the help of a program. (14)

SECTION-B

3. Explain all storage classes in detail and discuss their scope, lifetime, initial value and storage. (14)
4. a) What do you mean by control statements? Explain the switch statement and its syntax with the help of example.
   b) Explain for-loop with the help of syntax, flowchart and example. (2 *7=14)

SECTION-C

5. What do you mean by function? What are the different types of functions available in C? How can you create your own functions? illustrate with a program. (14)
6. a) What is the necessity of an Array? How 1D and 2D Array is represented in memory?
   b) Write a Program in C to check whether a string is palindrome or not? (2*7=14)

SECTION-D

7. What is structure? How can you define a structure and also explain how structure elements can be accessed using the dot operator? (14)
8. What do you mean by pointers? How can a pointer be declared and used in a program? Write a program in C to swap two number using pointers. (14)

C.E.O office-19/12/24 K.M.V I (EVE)

Paper Code: 1272 (40)

Programme: Bachelor of Science (Information Technology)
Semester-I
Exam Code: 118001
Course Code: BITL-1118

Programme: Bachelor of Computer Applications
Semester-I
Exam Code: 117901
Course Code: BCAL-1118

Course Title: Computational Data Science

Time Allowed: 3 Hours **Max Marks: 70**

Note: There are eight questions of equal marks (14 marks each). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

Section A

1. a) What do you mean by preprocessing and cleaning of data? (7)

   b) Explain types of data in detail. (7)

2. What is data science? Explain its application areas.

(14)

Section B

3. What do you mean by function? Explain its types.

(14)

4. Solve Equations with Factorization and Quadratic Formula

(a) $x^2 + 2x = 15$

(b) $x^2 + 5x + 6 = 0$ (2x7=14)

Section C

5. Explain addition and multiplication algorithms on polynomials. (14)

6. a) What do you mean by X-intercepts? Explain with example. (7)

b) Divide ($6x^3 - x^2 - 10x - 3$) by (2x -3) (7)

Section D

7. (A) Calculate missing frequency, if mean is 52

Classes	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	3	4	?	2	6	13

(B) By using all 3 methods find out mean from the following data

X	16	8	40	24	48	56	72	64	80	72

(2x7=14)

8. Explain the following

a) Median

b) Permutation Vs Combination

c) Mode

d) Factorials (4x3.5=14)

Exam Code: BSc (IT) – 118001
BCA- 117901

Paper Code: 1273

Programme: Bachelor of Computer Applications/Bachelor of Science (Information Technology)
Semester: I
Course Title: Introduction to Internet
Course Code: BCAM/BITM - 1110

Time Allowed: 3 Hours

Max Marks: 40

Note: Attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries eight marks.

Section A

Q1: Discuss the impact of the Internet on the society. (8)

Q2 a) Explain the hardware and software requirements of the Internet. (6)

b) Differentiate between website and web page. (2)

Section B

Q3: What best practices should you use in email communication? (8)

Q4: a) Discuss the various search techniques. (5)

b) What are various operators that can be used in searches. Give examples. (3)

Section C

Q5: Compare and contrast any two cloud storage and file management tools. (8)

Q6: Discuss the effective virtual meeting strategies. (8)

Section D

Q7: a) Explain digital footprints. (4)

b) Write steps to create professional online profile. (4)

Q8: Write a note on the following (4*2 = 8)

a) Digital portfolio
b) Online reputation
c) Personal branding
d) Screen time