

First Year B.Sc CS / BCA Model Question Paper

(SDE) (Paper I)

PAPER- I TECHNICAL COMMUNICATION

Time: 3 hrs

Marks: 100 marks

PART A

(Answer all questions. All questions carry equal marks) (10 x 10 = 100 marks)

1. Fill in the blanks choosing the correct word from the bracket
 - a) Charles Dickens is my English novelist. (favourable, favourite)
 - b) I wish Ithe captain of the team.(was, were)
 - c) She came here ondays.(alternative, alternate)
 - d) As there is good rain, farmers a good harvest. (expect, except) (4 marks)
2. Write one word for the following
 - a) One who is fond of eating
 - b) The act of killing a whole race
 - c) That which can be eaten
 - d) One who studies birds (4marks)
3. Define the following in one sentence
 - a) Skimming
 - b) Scanning
 - c) Intensive reading
 - d) Intonation (4 marks)
4. Fill in the blanks using the correct tense forms of the verbs given in bracket.
 - a) My brother..... (go) to England two years ago. He..... (return) next month. I (request) him to bring a piano ever since he(leave). (2 marks)
 - b) I first.....(meet) him ten years ago. Then he..... (export) sea food. Recently he..... (decide) to wind up his business. Now he.....(plan) to start a new one. (2 marks)
5. Fill up using suitable prepositions
 - a) The girl ran out the door and the stairsthe street.
 - b) Mary goesschool.....9 o'clock.....bus. (4 marks)
6. Fill up with the words opposite in meaning to those underlined.
 - a) The flower looks natural, but they were.....
 - b) Sita walked very....., but her friends were slow.
 - c) You should never try to conceal anything from the police. On the other hand you should everything.
 - d) The man look old; but he was (4 marks)
7. Correct the following sentences
 - a) The train left when I reached the station.

/ 

- b) She may will be at home.
- c) Each of my friends have subscribed the journal
- d) Brutus is a honourable man.

(4 marks)

8. Answer the following in one or two sentences.

- a) Differentiate between active listening and passive listening?
- b) What is a phoneme?

(2 marks)

(2 marks)

9. Change the voice

- a) Someone has stolen my book
- b) The thief did not touch anything else.
- c) Close the door.
- d) The children are playing in the ground

(4 marks)

10. Change into reported speech

- a) "I'm taking my examination next year but you took yours last year," he reminded his sister.
- b) "Why didn't you call a policeman?", Sophy asked the man.
- c) The culprit told the Judge, "Kindly give me permission to go home."
- d) "have you taken the examination seriously", Teacher said to Ramu

(4 marks)

PART B

(Answer one question each from each section. Each question carries 15 marks)

Module I

11. Complete the following conversation suitably

(1 × 15 = 15 marks)

- Lawyer: Where.....?
- Witness: I saw it on the counter in the shop.
- Lawyer: When did you see it?
- Witness:
- Lawyer: Why did you go to the shop?
- Witness:
- Lawyer: How
- Witness: I know this was the knife because it has the same kind of a handle.
- Lawyer: What kind
- Witness: It was a kitchen knife.

12. Read the passage and answer the questions given at the end.

It was a Sunday morning, May 21, 1972, in St. Peter's Church in Rome. As usual there were crowds of worshippers and tourists inside the church, gazing at Michaelangelo's *Pieta*. For nearly 500 years, this marble statue of the Virgin Mary holding her dead son in her lap has attracted devout men as well as lovers of art. It is one of the art masterpieces of the world. Generations have wondered at the shine of the translucent marble, the delicate shape of Christ's body and the sad beauty of the Madonna's youthful face.

Suddenly there was a loud cry as a man carrying a hammer leapt over the railing around the statue and struck it 15 shattering blows, before a guard was able to overpower him. The mad man was identified later as Laszlo Toth, a 34 year old Austrian born in Hungary, a "woman-hater", who said God had ordered him to kill the Madonna.

The scene inside the church was horrifying, the left arm of the Madonna was broken into three pieces, at the elbow and wrist, and the fingers were shattered; the veil covering the head and the left cheek were scarred in several places, and one eye lid was horribly damaged. Some 50 large fragments of marble from the statue lay on the floor, with 150 smaller ones, and a large number of pieces which had turned into powder.

Sympathy, advice, and money poured into Rome, from all over the world. It was as if people everywhere suffered a deep personal loss. The newspapers of the world said mankind had lost one of its greatest treasures, which could never be restored.

But in Rome, the task of restoring the statue had already been taken up. A team of 7 scientists and restorers, under Dr. Vittorio Fedarici, Director of the Scientific Research Laboratory in the Vatican Museum in Rome, began the slow and painful task which would keep them busy for 10 months.

First the precious fragments of marble were gathered up from every part of the church. Fortunately, a plaster cast of the statue had been made in 1934. Now, while the actual statue remained in the church, protected by a wooden partition, the plaster cast could be studied closely for the details broken off and missing from the original.

- a) The newspapers of the world said, "Mankind had lost one of its greatest treasures". What was the greatest treasure?
- b) Why did Laszlo Toth strike the statue with hammer?
- c) Who suffered the most at the loss of the statue?
- d) What part of the statue was not horribly damaged?
- e) How did the people react to the incident that happened on May 21, 1972?
- f) The writer says "fortunately a plaster cast of the statue had been made in 1934." Why was this considered fortunate?
- g) Why was the scene inside the church horrifying?

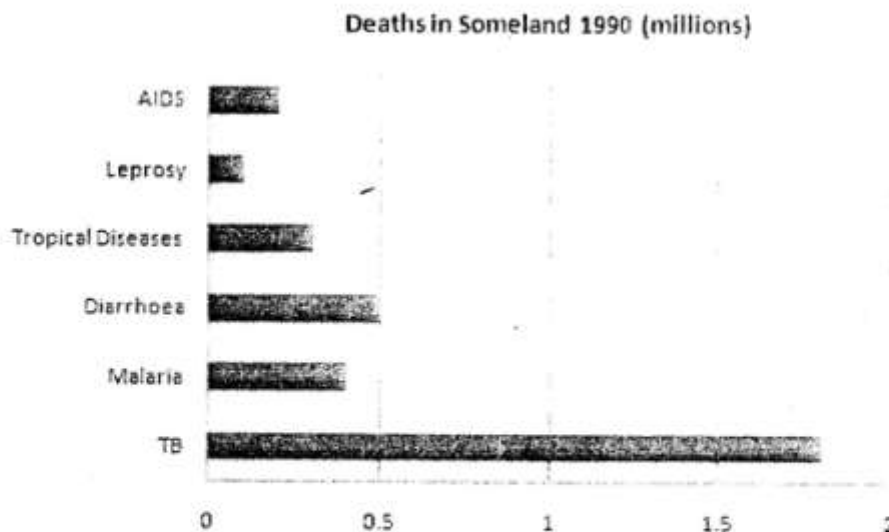
Module II

(1x15=15 marks)

13. Write a paragraph on any two of the following

- a) Influence of Science and technology in English
- b) Preservation of rivers
- c) India's population problem
- d) The use and misuse of mobile phones

14. The graph below shows the percentage of deaths occurred in Someland due to various diseases. Write a report on the information given in the graph.



Module III

(1 x 15 = 15 marks)

15. Write an essay of 120 words on any one of the following

- a) The importance of Discipline
- b) Importance of literacy

16. Rewrite the passage using the correct form of the verbs given in the brackets.

One quality that (help) students succeed in their studies is self-discipline (is) particularly important in college. I (learn) a great deal about self-discipline by observing two of my friends. I have noted that my roommate Emmy (plan) her time every night before she (go) to bed. She (write) down what she (has) to do the next day and how much time she (spend) doing each activity. First, she (schedule) her time for attending classes and working. She also (keep) time aside for socializing, running, studying and eating. By having a timetable and sticking to it, Emmy (is) always able to accomplish a lot more than I can. Another friend, Nancy (discipline) herself by not doing anything unless she (do) all her homework and reading. One night last month, I (invite) her to go out to dinner, but she (decline) because she (hasn't finish) her physics problem set. I wish I could be as disciplined as these two friends. I (know) that self-discipline is important as I want to be successful in college. Thus, next term I (make) an effort to discipline myself.

Module IV

(1 x 15 = 15 marks)

17. Write a letter to the editor of the Newspaper commenting on the reckless driving in your city
18. Prepare a CV of yours to be sent for the post of Computer Programmer in one of the IT Companies in your city

(Paper II)

DISCRETE MATHEMATICS

Time: 3 hrs

Max Marks: 100

PART A

Answer **all** questions. **All** questions carry **equal** marks.

1. Define equivalence relation on the set of integers that gives rise to 3 equivalence classes.
2. Define tautology and give an example.
3. Prove by induction that $n < 2^n$.
4. If $A(K) = 5 \cdot 3^K$, obtain recurrence relation.
5. Explain the homomorphism between groups.
6. Define a complete graph and give an example.
7. Define a tree and a forest and the relation between them.
8. Define a poset and give an example.
9. Define monoid and how does it differ from a semi group?
10. Define automation.

(10x4=40 Marks)

PART B

Answer **any one** question from **each** module

MODULE - I

11. If A, B and C are sets prove that $A(B \cap C) = (A \cap B) \cap (A \cap C)$.
12. If $f(x) = x^2 + x + 1$ and $g(x) = 2x - 1$ where x is a real number, find $f \circ g$, $g \circ f$, $f \circ f$ and $h(x)$ such that $g \circ h = 1$.

(1x15=15 Marks)

MODULE - II

13. Give direct and indirect proofs of $p \vee q$, $p \rightarrow q$, $p \rightarrow r$, $q \rightarrow s \Rightarrow s \vee r$.

14. Given the matrix $A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & -5 & 3 \\ 0 & -6 & 4 \end{bmatrix}$. Find a matrix P so that $P^{-1}AP$.

(1x15=15 Marks)

MODULE – III

15. Solve the recurrence relation $S(K) + 3S(K - 1) - 4S(K - 2) = 0$, $K \geq 2$ with $S(0) = 3$, $S(1) = -2$ by finding the generating function.

16. Find the group generated by the permutation $p = \begin{pmatrix} 1 & 2 & 3 & 4 \\ 2 & 3 & 1 & 4 \end{pmatrix}$ and group isomorphic to it.

(1x15=15 Marks)

MODULE – IV

17. Explain flow augmenting path and develop an algorithm to find maximal flow in a network.
18. Explain the connection between traversals of an expression tree and the different forms of an expression, given the expression $X = a * b - c / d + e$.

(1x15=15 Marks)

(Paper III)
DIGITAL ELECTRONICS

Time: 3 hrs

Max Marks: 100

PART A

Answer **all** questions. **All** questions carry **equal** marks.

1. Briefly explain the concept of LED's operation
2. What is RC coupled feedback amplifier? What are the types of RC coupled feedback amplifier and explain in detail.
3. Convert the following octal number to decimal
(i) 125_8 (ii) 67_8
4. Convert the following Boolean expression into standard POS form:
 $(A + \overline{B} + C)(B + \overline{C} + D)(\overline{A} + \overline{B} + C + D)$
5. Simplify the following using k-map:
 $F(ABC) = \Sigma(0, 2, 3, 4, 6)$
6. Briefly explain about ASCII?
7. Explain the concept of full and half adders with neat diagram?
8. What is comparator? Explain it in detail?
9. Describe the operation of CMOS?
10. What are the applications of AND and OR gates? Design a truth table for this gate.

(10x4=40 Marks)

PART B

Answer **any one** question from **each** module

MODULE – I

11. What is multi vibrator? Explain its type with neat diagram?
12. What is Oscillator? Explain its operation in detail.

(1x15=15 Marks)

MODULE-II

13. Add the following BCD numbers:

- a. $0011 + 0100$
- b. $00100011 + 00010101$
- c. $10000110 + 00010011$
- d. $010001010000 + 010000010111$

14. a. Find the 2's complement of the following:

$10110010, 00010110, 11111100, 10010001$

- b. Express the decimal number -39 as an 8-bit number in the sign magnitude, 1's complement, and 2's complement forms.

(1x15=15 Marks)

MODULE – III

15. Simplify the following Boolean expression using k-map and draw logical diagram.

$$A \overline{B} C + \overline{A} \overline{B} + \overline{A} B C D$$

16. Simplify the following expression using Quine McCluskey method.

$$\overline{A} B \overline{C} D + A B C D + \overline{\overline{A} B \overline{C} D} + A \overline{B} \overline{C} D + \overline{A B \overline{C} D} + \overline{A \overline{B} C \overline{D}} + A \overline{B} C \overline{D}$$

(1x15=15 Marks)

MODULE – IV

17. Explain the types of shift register with neat diagram?

18. What is counter? Explain all the types in detail?

(1x15=15 Marks)

(Paper IV)

PROGRAMMING IN C

Time: 3 hrs

Max Marks: 100

PART A

Answer **all** questions. **All** questions carry **equal** marks.

1. What is a flow chart? Draw and explain various symbols used in flow chart.
2. What are language translators? Explain (i) Compiler (ii) Assembler (iii) Interpreter.
3. What are variables and explain rules for naming a variable?
4. List scope, visibility, storage area, initial value and life time of register and auto storage classes in tabular format.
5. What is a function? Explain types of function.
6. Write a C program to find a given number is even or odd.
7. Give brief notes on files.
8. Explain local variables and global variables.
9. Write a C program to demonstrate the arithmetic operators.
10. What are arrays? Explain types of arrays.

(10x4=40 Marks)

PART B

Answer **any one** question from **each** module

MODULE – I

11. List out four categories of operators in C, with list of five operators in each category. Give the order of evaluation operators in tabular format.
12. (i) Differentiate between high level language and low level language.
(ii) Why C is called a middle level language?
(iii) Explain top down design of a program.

(1x15=15 Marks)

MODULE-II

13. What is Data type? Explain the available data types in C language. Tabulate the range, size and control strings of various datatypes.
14. (i) Declare an I-Dimensional array of size 100, to store integers. If the starting location of the array is 3000, what is the address of 13th element? Give the generalized formula.
(ii) Write a program to find prime numbers between 1 and 100.

(1x15=15 Marks)

MODULE – III

15. (i) What are pointers? What is the relation between arrays and pointers?
(ii) Differentiate between call by value and call by reference with the help of examples.

(iii) Briefly explain recursion with example.

16. (i) Write a program to print the Fibonacci series up to 100 using recursion..

(ii) Briefly explain dynamic memory allocation.

(1x15=15 Marks)

MODULE – IV

17. Write a program to store the register number, name, sex, mark1, mark2 and total marks of a set of students using structure. The total mark is sum of mark1 and mark2 and is evaluated automatically. Search for ‘girl’ students who have total greater than 75, assume mark1 and mark2 are in 50.

18. (i) Write a program to add two matrices.

(ii) Write short note on user defined type declaration (typedef).

(1x15=15 Marks)

(Paper V)

COMPUTER ORGANIZATION

Time : 3 hrs

Max Marks: 100

PART A

Answer **all** questions. **All** questions carry **equal** marks.

1. What are the fundamental units of a PC?
2. Multiply 101101 and 011001 using Booth’s Algorithm.
3. Differentiate between RISC and CISC architectures.
4. What is Pipelining? What are the various hazards that cause pipeline to stall?
5. Write short notes on memory interleaving.
6. Write short notes cache memory.
7. Brief on (i) Direct mapping (ii) Block set associative mapping.
8. What is meant by Asynchronous Data Transfer? What are its various types?
9. What is Programmed I/O? What is meant by the term Polling?
10. Differentiate between the following:
 - a. Vectored and Non- Vectored Interrupts
 - b. Memory Mapped I/O and I/O Mapped I/O

(10x4=40 Marks)

PART B

Answer **any one** question from **each** module

MODULE - I

11. a) Explain the basic operational concepts for executing typical instruction

ADD LOCA, R0

This instruction adds the operand at memory location LOCA to operand in Register R0 in the processor.

b) List the various registers used in a processor which help execution and explain function of each register.

12. a) Draw and explain the organization of 8085 microprocessor.

b) What are addressing modes? Explain any five addressing modes and show how operands are identified in each addressing modes using necessary diagrams.

(1x15=15Marks)

MODULE-II

13. a) What are the different steps of operations processor has to perform to execute an instruction?
b) Explain the design of a simple ALU.
c) Differentiate between hardwired and microprogrammed control unit.
14. What is a microprogram? Explain the various ways of generating microcode in a microsequenced control unit design?

(1x15=15 Marks)

MODULE – III

15. Explain the concept of virtual memory. Explain the virtual memory address translation mechanism.
16. a) A block-set-associative cache consists of a total of 64 blocks divided into 4 block set.
The main memory contains 4096 blocks, each block consisting of 128 words:
(i) How many bits are there in main memory address?
(ii) How many bits are there in each of TAG, SET and WORD fields?
b) What is
(i) Page fault
(ii) Hit ratio

- c) Draw and explain the internal organization of a memory chip of 16 x 8 (16 words x 8 bit).

(1x15=15 Marks)

MODULE – IV

17. a) What is an interrupt? Explain the concept of Interrupt-driven I/O.
b) Write short notes on Daisy chaining.
18. a) What is Direct Memory Access? Explain with the help of diagram the working of a DMA controller? What are the various DMA transfer modes?
b) What is USB? What are its types?

(1x15=15 Marks)

(Paper VI)

PRINCIPLES OF ACCOUNTANCY AND MANAGEMENT

Time: 3 hrs

Max Marks: 100

PART A

Answer **all** questions. **All** questions carry **equal** marks.

1. Define Management. Describe the functions of Management.
2. Briefly explain Maslow's Need Hierarchy Theory of Motivation.
3. What is marketing mix? Explain the various elements of marketing mix.
4. What is sales promotion? How it is differentiated from advertising?
5. Describe the various workflow designs.
6. Explain Net Present Value (NPV) Analysis.
7. Describe the different method& techniques for project evaluation.
8. Prepare balance sheet with hypothetical figures.
9. What is Human Resource Management? State its importance.
10. Differentiate training and development .

(10x4=40 Marks)

PART B

Answer **any one** question from **each** module

MODULE - I

11. Explain Henry Fayol's Principles of Management.
12. What is organizational behavior? Explain its scope and significance.

(1x15=15 Marks)

MODULE-II

13. Write a note on:

- a) CPM
- b) PERT

14. Describe product life cycle. Explain the pricing strategies suitable at the different

(2x15=30 Marks)

MODULE – III

15. Define accounting. Explain the principles of accounting in detail.
16. What is Break Even Analysis? List the assumptions of break even analysis. Explain the significance of break even analysis with the help of break even chart.

(1x15=15 Marks)

MODULE – IV

17. Explain the functions of HRM in detail.
18. Explain the different types of training.

(1x15=15 Marks)