



Dezyne École College
BCA Department – Probable Question Paper Sets
Subject – C Programming

PYQ-Based Probable Question of C Programming Language

Paper Set – 1

Section A (2 Marks Each) – Attempt All

1. Define C tokens and list their types.
2. What is an identifier? Write rules for naming identifiers.
3. Define operator precedence and associativity with example.
4. What is recursion? Explain with one example.
5. Define pointer and write its syntax.
6. What is an array? Explain different types of arrays.
7. Find the output:

```
int a = 5;
printf("%d %d %d", a, a++, ++a);
```
8. Find the output:

```
int x = 10;
printf("%d", x > 5 ? x++ : --x);
```
9. Find the output:

```
int i = 1;
while(i++ < 4)
    printf("%d ", i);
```
10. Find the output:

```
int a = 3;
printf("%d", ~a);
```

Section B (10 Marks Each) – Attempt All

1. Explain data types in C with classification and examples.
2. Write a C program to check whether a number is prime or not.
3. (a) Explain decision-making statements (if, if-else, else-if ladder, switch).
(b) Write a program to find the largest of three numbers.
4. Write a C program to find factorial using recursion.
5. Explain functions in C and types of functions with examples.
6. (a) Explain one-dimensional and two-dimensional arrays.
(b) Write a program to find the largest element in an array.
7. Explain strings in C and commonly used string functions.
8. Write a C program to reverse a string without using library functions.
9. Explain storage classes (auto, static, extern, register) with scope and lifetime.
10. (a) Explain pointers and pointer arithmetic.
(b) Write a program to swap two numbers using pointers.

C Programming Language – Question Paper (Set B)

Section A (2 Marks Each)

1. Define constants and symbolic constants.
2. What is ternary operator?
3. Define break and continue statements.
4. What is call by value?
5. Define union.
6. What is dynamic memory allocation?
7. Find the output:

```
int a = 2;  
printf("%d %d", a, ++a + a++);
```
8. Find the output:

```
int x = 5;  
printf("%d", x << 1);
```
9. Find the output:

```
for(int i=0;i<3;i++)  
    printf("%d ", i++);
```
10. Find the output:

```
char ch = 'A';  
printf("%d", ch);
```

Section B (10 Marks Each)

1. Explain operators in C and hierarchy of operators.
2. Write a program to generate Fibonacci series.
3. (a) Explain looping statements.
(b) Write a program to print a pattern using nested loops.
4. Write a program for matrix addition.
5. Explain recursion with advantages and disadvantages.
6. Write a program to check palindrome string.
7. Explain storage classes with examples.
8. Differentiate between structure and union.
9. (a) Explain pointers and arrays relationship.
(b) Write a program to print array elements using pointer.
10. Explain dynamic memory allocation functions.

C Programming Language – Question Paper (Set C)

Section A (2 Marks Each)

1. Define keyword with examples.
2. What is expression in C?
3. Define goto statement.
4. Define call by reference.
5. What is typedef?
6. Define multidimensional array.
7. Find the output:

```
int x = 4;
printf("%d %d", x--, --x);
```
8. Find the output:

```
int a = 5;
printf("%d", a == 5 && a++);
```
9. Find the output:

```
int i = 1;
do { printf("%d ", i);
} while(i--);
```
10. Find the output:

```
int arr[3] = {1,2,3};
printf("%d", *(arr+1));
```

Section B (10 Marks Each)

1. Explain variables, constants, and symbolic constants.
2. Write a program to assign grades using if-else ladder.
3. Explain formatted and unformatted I/O functions.
4. Write a recursive program for Fibonacci series.
5. (a) Explain arrays and their types.
(b) Write a program to search an element in array.
6. Write a program to sort names (array of strings).
7. Explain pointers and pointer arithmetic.
8. Explain structures and nested structures.
9. (a) Explain structure.
(b) Write a program to store student details.
10. Explain infix, prefix, and postfix expressions.



Dezyne École College
BCA Department – Probable Question
Subject Computer Architecture

PYQ-Based Probable Question of Computer Architecture
Paper Set – 1

Section A (2 Marks Each) – Attempt All

1. Convert $(101101)_2$ into decimal.
2. Perform subtraction using r's complement: $1011_2 - 0110_2$.
3. Define Boolean function.
4. What is a logic gate?
5. What is K-map?
6. Define multiplexer.
7. What is flip-flop?
8. Define addressing mode.
9. What is interrupt?
10. Define cache memory.

Section B (10 Marks Each)

1.
 - a) Convert 345_{10} into binary, octal, and hexadecimal.
 - b) Explain number system with examples.
2. Simplify using 4-variable K-map:
 $F(A, B, C, D) = \Sigma(0, 2, 5, 7, 8, 10, 13, 15)$
Draw the simplified circuit.
3.
 - a) State and explain Boolean algebra theorems.
 - b) Prove: $A + AB = A$
4.
 - a) Design a 4-bit binary adder.
 - b) Add: $1011_2 + 1101_2$
5. Explain different types of flip-flops and their triggering methods.
6. Design a 4:1 multiplexer and explain its working.
7. Explain memory hierarchy with diagram.
8. Explain interrupts and their types.
9. Write an assembly program to add two numbers stored in memory.
10. Explain DMA data transfer with block diagram.

Computer Architecture – Question Paper Set 2

Section A (2 Marks)

1. Convert $(7A)_{16}$ into binary.
2. Perform subtraction using r-1 complement: $11012 - 01012$.
3. Define canonical form.
4. What is NAND gate?
5. What are don't care conditions?
6. Define decoder.
7. What is race-around condition?
8. What is instruction cycle?
9. Define virtual memory.
10. What is SRAM?

Section B

1. (a) Convert 547_{10} into binary, octal, and hexadecimal.
(b) Explain base conversion methods.
2. Simplify using K-map:
 $F(A, B, C, D) = \Sigma(1,3,4,6,9,11,12,14)$
3. (a) Explain universal gates.
(b) Implement $F = AB + A'B'$ using NAND gates only.
4. (a) Design a full subtractor.
(b) Perform: $1010_2 - 0111_2$
5. Explain Master-Slave JK Flip-Flop and race-around condition.
6. Explain addressing modes with suitable examples.
7. Compare SRAM and DRAM with structure and working.
8. Explain I/O organization and interrupt handling mechanism.
9. Write an assembly program to subtract two numbers.
10. Explain cache memory and its mapping techniques.

Computer Architecture – Question Paper Set 3

Section A (2 Marks)

1. Convert $(345)_8$ into binary.
2. Add: $10102 + 01112$.
3. Define standard SOP form.
4. What is NOR gate?
5. What is K map method?
6. Define magnitude comparator.
7. What is D flip-flop?
8. What is machine instruction?
9. What is DMA?
10. Define DRAM.

Section B (10 Marks)

1. (a) Convert 255_{10} into binary and hexadecimal.
(b) Explain binary number system.
2. Simplify using 3-variable K-map:
 $F(A, B, C) = \Sigma(1,2,3,5,7)$
3. (a) Explain digital logic gates with truth tables.
(b) Implement XOR using basic gates.
4. (a) Design a magnitude comparator.
(b) Compare: $A = 1011_2, B = 1001_2$
5. Explain sequential circuits and differentiate from combinational circuits.
6. Explain BOOTH algorithm and multiply:
 $(5)_{10} \times (-3)_{10}$
7. Explain virtual memory and paging.
8. Explain bus structure and types.
9. Write an assembly program to multiply two numbers.
10. Explain memory hierarchy (cache, RAM, ROM).



Dezyne École College
BCA Department – Probable Question Paper Sets
Subject Operating System

PYQ-Based Probable Question of Operating System
Paper Set – 1

Section A (2 Marks Each) – Attempt All

1. Define Operating System.
2. What is system call in OS.
3. What is process in OS. Briefly Explain process management.
4. What is a semaphore.
5. What do you understand by contiguous allocation in memory management.
6. Briefly Explain Page replacement algorithm.
7. Explain the concept of demand paging.
8. Explain the usage of any 5 directory related commands in bash.
9. Briefly list the shell responsibilities with reference to Bourne Again Shell (BASH).
10. Write a shell script that checks whether the entered character is a vowel (a,e,i,o,u) or not.

Section-B (10 Marks)

11. List and Explain the goals of operating system.
12. Explain the concept of Real Time Operating System (RTOS) Explain the usage and application areas of RTOS.
13. Draw and describe the process states in process management?
14. Explain the difference between pre-emptive and non- pre-emptive scheduling. Give Examples.
15. Explain the concept and usage of virtual memory.
16. Explain Logical versus Physical address in Memory Management. Hence explain the working of Memory management unit.
17. What is a dead lock in process management. Explain methods for handling deadlocks.
18. What is a process control block (PCB) in Linux. Explain the role of PCB when switching from one process to another.
19. Explain the system call interfaces for process management. Explain the usage of 'Fork' and 'exit'.
20. What is a shell script . Write a shell script for a simple calculation program that can add, subtract, multiply or divide two numbers as desired by the user. Add Comment lines to explain what each part of the shell script is doing in the program.

Operating System – Question Paper Set 2

Section A (2 Marks Each) – Attempt All

1. Explain the difference between batch processing and time-sharing operating systems
2. A process has a logical address of 0x3F2 and is located in page 2. Calculate its physical address if the page size is 256 bytes.
3. What is a critical section?
4. State two advantages of multithreading.
5. For a system with 4 frames and the following reference string, calculate the number of page faults using the FIFO page replacement algorithm:
Reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0
6. Mention the purpose of the chmod command in file systems.
7. State the role of mkdir and rmdir commands.
8. What is the use of the getenv function?
9. Explain the role of pipes in shell programming.
10. Define file metadata and its importance.

Section-B (10 Marks)

11. Given 3 frames and the reference string: 2, 3, 2, 1, 5, 2, 4, 5, 3, 1, calculate the number of page faults using the LRU (Least Recently Used) page replacement algorithm.
12. Discuss the following process management system calls:
(a) fork (b) exec (c) wait
13. Calculate the average turnaround time and waiting time for the following processes using the SJF:
(Shortest Job First) scheduling algorithm:
Processes: P1, P2, P3, P4
Arrival Times: 0, 1, 2, 3 ms
Burst Times: 5, 3, 8, 6 ms
14. Write a shell script to:
(a) Display the number of files in the current directory.
(b) Check if a given number is even or odd.
15. A system uses a virtual memory with a page size of 4 KB. Translate the virtual address 0x12F4 to the physical address assuming it maps to frame 5.
16. (a) Explain the significance of quoting and test commands in shell scripting.
(b) Provide an example of a shell script using control structures (if—else, for, or while).
17. Describe the difference between paging and segmentation with suitable examples. Include a numerical to show how segmentation divides a logical address.
18. Explain the concept of semaphores with an example where semaphores are used to solve the producer-consumer problem.

19. Explain thrashing in the context of memory management and provide an example calculation of CPU utilization for given processes under high thrashing conditions.
20. (a) Discuss the goals and functions of an operating system.
(b) Explain the differences between distributed systems and real-time systems.

Operating System – Question Paper Set 3

Section A (2 Marks Each) – Attempt All

1. Define Operating System. What are the main goals of an OS?
2. What is a system call? Give two examples of system calls used in process management.
3. Differentiate between process and thread.
4. What is a critical section? State the three conditions it must satisfy.
5. Define contiguous memory allocation. State its disadvantage.
6. What is demand paging? How does it differ from simple paging?
7. What is a deadlock? State the four necessary conditions for deadlock.
8. Explain the purpose of the chmod and chown commands in file systems.
9. What is the role of the fork() and exec() system calls in process creation?
10. What is shell scripting? List any four features of the Bourne Again Shell (BASH).

PART-B

11. Explain the different classes of Operating Systems in detail. Compare batch processing, multi-processing, time-sharing, distributed, and real-time systems with examples.
12. What is CPU scheduling? Explain the following scheduling algorithms with an example for each:
(a) First Come First Served (FCFS) (b) Shortest Job First (SJF) (c) Round Robin (RR)

13. Explain the concept of semaphores. How are semaphores used to solve the Producer-Consumer problem?

Explain with algorithm and example.

14. Calculate the average turnaround time and average waiting time for the following processes using the

Round Robin scheduling algorithm with time quantum = 2 ms:

Processes: P1, P2, P3, P4

Arrival Times: 0, 1, 2, 3 ms

Burst Times: 4, 3, 5, 2 ms

15. Explain the concept of paging and segmentation in memory management. Describe how logical address is

translated to physical address in both techniques. What is segmentation with paging?

16. Given 3 frames and the following reference string, calculate the number of page faults using:

Reference string: 1, 2, 3, 4, 1, 2, 5, 1, 2, 3, 4, 5

(a) FIFO Page Replacement Algorithm

(b) LRU (Least Recently Used) Page Replacement Algorithm

17. What is thrashing in memory management? Explain its causes and methods to prevent it. Also define

virtual memory and explain virtual memory with paging.

18. Explain the file system structure in detail. Discuss the following system calls used for file I/O operations with syntax and example:

open, create, read, write, close, lseek, dup2

19. Explain the concept of shell programming with Bourne Again Shell (BASH). Write shell scripts for the following:

(a) A script that accepts two numbers from the user and performs addition, subtraction, multiplication, and division.

(b) A script using a for loop to display the first 10 natural numbers.

20. (a) Explain the following directory-related functions in Linux with their purpose and syntax:

mkdir, rmdir, chdir, getcwd, opendir, readdir, closedir, rewinddir

(b) Explain the process environment in Linux. Discuss the role of environment variables, getenv, and setenv functions with examples.



Dezyne École College
BCA Department – Probable Question Paper
Subject – General English

PYQ-Based Probable Question of General English
Paper Set – 1

Section A (2 Marks)

Q1. Describe the central idea of the story “*The Inspector of Schools.*”

Q2. Explain the character of Cyrus in the lesson “*Mr Krishnan’s Family and I.*”

Q3. Write a short note on the writing style of Jomo Kenyatta.

Q4. Fill in the blanks with correct modals:

- (i) She _____ finish the work by tomorrow. (can/might)
(ii) You _____ respect your elders. (should/may)
(iii) He _____ speak French when he was young. (could/may)
(iv) We _____ go to the market later. (may/can)

Q5. Fill in the blanks with appropriate determiners:

- (i) _____ students attended the lecture. (few/many)
(ii) There is _____ sugar in the jar. (some/all)
(iii) _____ book do you prefer? (which/what)
(iv) Can I have _____ water? (some/one)

Q6. Fill in the blanks with correct phrasal verbs:

- (i) The thief _____ into the house. (broke in / called off)
(ii) The meeting was _____ due to rain. (called off / broke in)
(iii) She needs to _____ her studies. (catch up / break out)
(iv) They _____ the electricity supply. (cut off / cut in)

Q7. Translate into English:

- (i) तुम कहाँ जा रहे हो?
(ii) आज मौसम बहुत अच्छा है।
(iii) मुझे किताबें पढ़ना पसंद है।
(iv) स्वास्थ्य सबसे बड़ा धन है।

Q8. Change into Passive Voice:

- (i) She wrote a letter.
- (ii) They are playing cricket.
- (iii) He will complete the work.
- (iv) The teacher praised the student.

Q9. Change into Indirect Speech:

- (i) Ram said,
- (ii) She said,
- (iii) He said to me,
- (iv) The teacher said, "Work hard."

"I am tired."
"My brother is playing."
"I will help you."

Q10. Fill in the correct form of verb:

- (i) She _____ to become a doctor.
- (ii) He _____ all night.
- (iii) I am _____ a letter.
- (iv) They will be _____ football. (playing/play)

(wants/wanted)
(slept/sleeping)
(writing/write)

Section -B (10 Marks)

Q1. Read the passage carefully and answer the questions:

Passage:

Ravi was a hardworking student. He always completed his work on time. His teachers appreciated him for his dedication. One day, he helped a poor child by giving his books. This act of kindness made everyone proud of him.

Questions:

- (i) Who was Ravi?
- (ii) Why did teachers appreciate him?
- (iii) What good deed did he do?
- (iv) What lesson do you learn from the passage?

Q2. Explain the theme of the short story by The Story of Mohammad Din.

Q3. Describe the plot of "*The Gentlemen of the Jungle.*"

Q4. Write a letter to the Principal requesting a bonafide certificate.

OR

Write a letter to the Manager of a newspaper for subscription.

Q5. Write a paragraph on any one:

- (i) Online Education
- (ii) Climate Change
- (iii) Social Media

Q6. Write a précis of a given passage and suggest a suitable title.

Time is the most precious resource available to human beings. Unlike wealth or possessions, once time is lost, it can never be regained. Great thinkers and leaders have emphasized that success depends largely on how wisely one uses time. A student who manages time well

can achieve academic excellence, while a professional who values time can reach the heights of their career. Unfortunately, many people waste hours on trivial pursuits, forgetting that every moment counts. Proper planning, discipline, and prioritization are essential to make the best use of time. Those who respect time not only accomplish their goals but also inspire others to do the same.

Q7. Write a letter to your friend describing your holiday plans.

Q8. Translate the following:

(Hindi to English):

- (i) मैं स्कूल जा रहा हूँ।
- (ii) वह बहुत खुश है।
- (iii) तुम कहाँ रहते हो?
- (iv) मुझे खाना बनाना पसंद है।
- (v) आज मौसम अच्छा है।

(English to Hindi):

- (vi) You may come in.
- (vii) Are you ready?
- (viii) I will visit Delhi tomorrow.
- (ix) What are you doing?
- (x) She completed her work.

Q 9. Read the following passage carefully and answer the given questions

Reading is often described as food for the mind. Just as our body needs nourishment to grow and remain healthy, our mind requires knowledge and ideas to stay active and sharp. Books are the most reliable source of this nourishment. They not only provide information but also inspire imagination, creativity, and empathy. A person who reads regularly develops a broader outlook on life and is better equipped to face challenges. In contrast, those who neglect reading often find themselves limited in thought and expression. Therefore, cultivating the habit of reading is essential for personal growth and success. Questions

1. Why is reading compared to food for the mind?
2. What benefits does regular reading provide to a person?
3. How do books inspire imagination and creativity?
4. What happens to people who neglect reading?
5. Suggest a suitable title for the passage.

Q 10 Change the Voice in the following: -

1. The teacher explains the lesson.
2. The gardener is watering the plants.
3. The committee will announce the results tomorrow.
4. She has completed the project.
5. They are watching a movie.
6. The police caught the thief.
7. The students were singing a song.

8. He will deliver the speech at the conference.
9. The workers built the bridge in two years.
10. The manager is reviewing the report.