

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR RECRUITMENT TO POSTS
IN BPS-17 UNDER THE FEDERAL GOVERNMENT, 2001.

COMPUTER SCIENCE

TIME ALLOWED: THREE HOURS

MAXIMUM MARKS: 100

- NOTE:1. Attempt FIVE questions in all, including question No.8 which is **COMPULSORY**. Select at least **ONE** question from **EACH** of the **SECTIONS A, B and C**. All questions carry **EQUAL** marks.
2. Illustrate your answers with diagrams and sketches where necessary.
3. Answers should be to the point. Avoid unnecessary details but record facts and any assumptions made.

SECTION - A

1. (a) Draw the block diagram of a digital computer. Describe the functions of its various parts.
(b) What is a Computer Bus? Name and briefly explain the functions of important Computer Buses.
2. (a) What does Network protocols mean? Name Two main categories of network protocols. Explain and give examples of each.
(b) What is the OSI model? How many layers does it consist of? Name these layers along with their brief functionality.
3. (a) What are the five major activities of an operating system in regard to process management?
(b) Briefly describe the three major activities of an operating system in regard to secondary storage management.

SECTION - B

4. (a) Write down the syntax and flow chart of if/else operation. Also explain its function. (6)
- (b) What is the output of the following code? (6)
- ```
int x = 5;
int y = 10;
cout << "x =" << ++x << '\n';
cout << "x =" << --x << '\n';
cout << "y =" << (y = ++x - 2) << '\n';
cout << "y =" << y ++ << '\n';
```
- (c) Consider the following program segment:
- ```
cout << "Enter the value for x";
cin >> x;
cout << "Enter the value for y";
cin >> y;
if x>0
{
  if y>0
  --y;
}
else
++ x;
```

126
COMPUTER SCIENCE

- (i) Are there any Syntax errors in the code? If so where are they?
 - (ii) Assuming any Syntax errors corrected, when will y be decremented?
 - (iii) Assuming any Syntax errors corrected, when will x be incremented?
- 5: (a) Name the models that can be used in Software engineering. Explain any one model in detail. (10)
- (b) Differentiate between a Stack and a Queue. How are these handled in C++? Describe various situations where stacks are preferred over queues. (10)

SECTION - C

6. What is normalization? Briefly explain 1st, 2nd and 3rd normal forms using any Database example. (20)
7. (a) Define the term "Computer Animation". Briefly explain the design of animation sequences. (10)
- (b) What is clipping? Why is it used in computer graphics? Name 5 primitive types of clipping. Briefly explain any two types. (10)

COMPULSORY QUESTION

8. (A) Write only True or False in the Answer Book. Do not reproduce the questions. (1 × 10)

- (1) Detecting and recovering errors in data communication is called flow control.
- (2) Shareware software are used to share data between two computers.
- (3) Computer programs that are used to detect and remove viruses from the computer system are called anti-virus programs.
- (4) The preprocessor directive "include" is used to define a constant quantity.
- (5) Incremental backup means the entire backup of the data from the hard disk of the computer.
- (6) Wide Area Networks are limited to one office building.
- (7) Secondary storage is another name for RAM.
- (8) LPT2 represents the second parallel port.
- (9) A Spool Folder is a temporary storage area for print jobs.
- (10) A Webmaster is a person who maintains the website of an organization.

- (B) Give short answers to the following questions (1 × 10)

- (11) What is Fast Ethernet?
- (12) How do you add a workstation to the domain?
- (13) What is the draw back of Array implementation of Collection?
- (14) Briefly write the procedure for Binary Search.
- (15) Conceptually what happens in a DBMS?
- (16) Briefly describe ROM - BIOS.
- (17) How do you define PORTS? Name different types of ports.
- (18) What is Password? Where and how will you use it?
- (19) How do viruses infect PCs?
- (20) Briefly describe Data Transmission Modes.