FEDERAL PUBLIC SERVICE COMMISSION

COMPETITIVE EXAMINATION FOR
RECRUITMENT TO POSTS IN BS-17
UNDER THE FEDERAL GOVERNMENT, 2015

Roll Number

COMPUTER SCIENCE

TIME ALLOWED: THREE HOURS	**PART-I (MCQS) MAXIMUM MARKS = 20**
PART-I(MCQS): MAXIMUM 30 MINUTES	**PART-II MAXIMUM MARKS = 80**

NOTE: (i) **Part-II** is to be attempted on the separate **Answer Book.**
(ii) Attempt **ONLY FOUR** questions from **PART-II, selecting at least ONE question from EACH SECTION. ALL** questions carry **EQUAL** marks.
(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.
(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.
(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
(vi) Extra attempt of any question or any part of the attempted question will not be considered.
(vii) **Use of Calculator is allowed.**

PART-II

SECTION-A

Q.No.2. (a) Why Registers are used in CPU operations? Define the purposes of MAR, IR and Program Counter. **(08)**
(b) Give scheme for Deadlock Prevention. **(06)**
(c) Elaborate the concept of IPV6. Explain its advantages over IPV4. **(06)**

Q.No.3. (a) Explain the functionality of seven layers of OSI reference model and map with TCP/IP protocol suite. **(08)**
(b) Discuss Instruction Execution Cycle. **(06)**
(c) Briefly explain Paging and Segmentation with diagrams. **(06)**

SECTION-B

Q.No.4. (a) Explain the functionality of Hash Table. By supposing that table size is 100, give steps to insert data 112, 2023, 3001 into Hash Table and then to search 2023 from Hash Table. **(08)**
(b) What is the difference between Function Overloading and Function Overriding? Explain your answer by giving example syntax for each one. **(06)**
(c) Write short notes on the following: **(06)**
I. USECASE Diagram II. Activity Diagram

Q.No.5. (a) Write down difference between: **(08)**
I. Data Hiding and Encapsulation II. Constructor and Copy Constructor
(b) Build and draw a Binary Search Tree for the following input data 25, 11, 75, 69, 115, 50, 72, 17, 200, 60, 35. **(06)**
(c) Explain Incremental Model of Software Engineering by giving its advantages over other models. **(06)**

SECTION-C

Q.No.6. (a) Write down notes on the following: **(08)**
I. CRT Display Devices II. LCD Display Devices
(b) What is CSS? How many ways are there to link CSS and XHTML? **(06)**
(c) Write note on the followings: **(06)**
I. 3NF II. BCNF

Q.No.7. (a) Differentiate between the following by giving their respective definitions and concepts **(08)**
I. Equvi Join II. Outer Join III. Natural Join
(b) What are different web Architectures? Explain their Advantages and Disadvantages. **(06)**
(c) Write down Incremental Algorithm for Line drawing from $p_0(x_0,y_0) \rightarrow p1(x_1,y_1)$ where $x_1>x_0$ and $|dx|>|dy|$ **(06)**

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