COMPUTER SCIENCE

FEDERAL PUBLIC SERVICE COMMISSION
COMPETITIVE EXAMINATION FOR
RECRUITMENT TO POSTS IN BPS-17 UNDER
THE FEDERAL GOVERNMENT, 2009

COMPUTER SCIENCE

S.No.	
R.No.	

TIME ALLOWED:	**(PART-I) 30 MINUTES**	**MAXIMUM MARKS:20**
	(PART-II) 2 HOURS & 30 MINUTES	**MAXIMUM MARKS:80**

NOTE: (i) **First** attempt **PART-I (MCQ)** on separate **Answer Sheet** which shall be taken back after **30 minutes.**
(ii) Overwriting/cutting of the options/answers will not be given credit.

PART – I (MCQ)
(COMPULSORY)

Q.1. Select the best option/answer and fill in the appropriate box on the Answer Sheet. (20)

(i) AX register is also known as:
(a) Accumulator (b) Collector (c) Distributor
(d) Counter (e) None of these

(ii) In the Base + Offset addressing, Offset address is also known as:
(a) Physical Address (b) Logical Address (c) Actual Address
(d) Instruction Address (e) None of these

(iii) The technique for allowing a unit to check the status of another independently function unit is known as?
(a) Interrupt (b) System call (c) Polling
(d) Trape (e) None of these

(iv) The method for storing data temporarily such that the input-output of the same job is overlapped with its own processing, is known as:
(a) Spooling (b) Contention (c) I/O wait
(d) Buffering (e) None of these

(v) The DMA that uses Busses when CPU is not using them is termed as:
(a) Shared DMA (b) Cycle Stealing (c) Channel
(d) Transparent DMA (e) None of these

(vi) _____ Scheduler deals with the decision as to whether to admit another new job to the system.
(a) High Level (b) Medium Level (c) Low Level
(d) Short term (e) None of these

(vii) When the process is in the states of Blocked Suspended or Ready Suspended, its relevant data is stored in:
(a) Main Memory (b) Hard Disk (c) Magnetic Tape
(d) Buffer (e) None of these

(viii) Priority, P = (Time Waiting + Run Time) / Run Time is used to calculate priority in _____ scheduling algorithm:
(a) Shortest Job First (b) Priority Scheduling (c) Longest Wait First
(d) Highest Response Ratio Next (e) None of these

(ix) HDLC Protocol stands for:
(a) High-Level Data Link Control (b) High Level Development Protocol
(c) Huge Level Data Link Control (d) High Development Level Control
(e) None of these

(x) _____ is the generic name for a set of standards issued by the International Communications Standards Body CCITT, designed to support Message Handling Systems; i.e. Electronic Mail.
(a) TCP/IP (b) ISDN (c) X.400
(d) X.25 (e) None of these

(xi) _____ layer is responsible for the transfer of a packet of data along one link in the network. It organizes data into frames and detects errors in transmission.
(a) Physical Layer (b) Data Link Layer (c) Network Layer
(d) Transport Layer (e) None of these

(xii) Encryption is the conversion of data in some intelligible format into an unintelligible format called _____ to prevent the data from being understood if read by an unauthorized party.
(a) Clear Text (b) Encrypted Text (c) Cipher Text
(d) Coded Text (e) None of these

(xiii) Binary search requires about _____ comparisons with an initial list of 1,000,000 elements.
(a) 10 (b) 20 (c) 35 (d) 100 (e) None of these

(xiv) A _____ header list is a header list where the last node contains the null pointer.
(a) Grounded (b) Circular (c) One way (d) Rooted (e) None of these

(xv) _____ are small applications that are accessed on an internet server, transported over the internet, automatically installed and run as part of a web document.
(a) Applets (b) Java Bean (c) Sockets (d) Java Component (e) None of these

(xvi) AWT stands for:
(a) Abstract Window Technique (b) Abstract Window Toolkit (c) Actual Window Technique
(d) Added Window Toolkit (e) None of these

(xvii) GIF images can have only upto _____ colors.
(a) 128 (b) 256 (c) 512 (d) 1024 (e) None of these

(xviii) _____ is stored on a client and contains state information of the website visited.
(a) Cookies (b) Servelet (c) History (d) Resident Page (e) None of these

(xix) In software Engineering KPA denotes.
(a) Key Process Audit (b) Key Process Area (c) Key Process Analysis
(d) Key Problem Area (e) None of these

(xx) The _____ Process Model defines a series of events that will trigger transitions from state to state for each of software engineering activities.
(a) Spiral (b) Operational (c) RAD
(d) Concurrent Development (e) None of these

PART – II

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)** Extra attempt of any question or any part of the attempted question will not be considered.

SECTION – I

Q.2. Explain **ANY FOUR**. **(20)**
(i) Cache Memory (ii) Static & Dynamic RAM (iii) Instruction Cycle
(iv) Buses & their types (v) Segment Registers (vi) Instruction Pipelining

Q.3. (a) Describe briefly five state process lifecycle **(6)**
(b) Explain multi level feedback queue scheduling algorithm. **(6)**
(c) Describe briefly different communication channels **(8)**

SECTION - II

Q.4. (a) What are Virtual Functions? And how they can be utilized for polymorphism? Use C++ for writing example program. **(10)**
(b) Explain with examples **ANY TWO:** **(10)**
(i) Inheritance & Aggregation (ii) Data Hiding & Encapsulation
(iii) Constructors & Destructors (iv) Class, Object and Abstraction

Q.5. (a) Write and explain algorithm for Binary Search. **(8)**
(b) Explain **ANY TRHEE:** **(12)**
(i) Stack & Queue (ii) Tree & Graph (iii) Linked List & Array
(iv) Algorithm & Program (v) Complexity of Algorithm

Q.6. (a) Explain the terminologies of Process, Methods and Tools. **(6)**
(b) What is Software Process Model? Explain Spiral Process Model. **(14)**

SECTION – III

Q.7. (a) What is a Database? Explain and differentiate Relational Database Model from the other Database Models. **(10)**
(b) Explain with example Entity Relationship Diagram. **(10)**

Q.8. Explain **ANY FOUR**: **(20)**
(i) Computer Graphics (ii) Pixel Art (iii) Vector Graphics
(iv) Computer Animation (v) Rendering (vi) 2D & 3D Graphics

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