Lecturer in Computer Science (B-17) — 2023 · Solved Past Paper

Body: Khyber Pakhtunkhwa Public Service Commission (KPPSC) · **Post:** Lecturer in Computer Science (B-17) · **Year:** 2023 · **Questions:** 45 in the original paper — **44 solved and verified**, 1 excluded as defective (Q8) · **Price:** Free

> **How to use this paper:** each question shows the stem, the four options, and the correct answer. Click “Why each option?” under a question to see all four options explained — one question teaches four topics. General Knowledge answers are as of the 2023 sitting.

Source note: Typed community reproduction on MCQsGalaxy, exam paper "KPPSC Lecturer Computer Science June 2023" (https://mcqsgalaxy.com/exam-paper/kppsc-lecturer-cs-june-2023/, pages /2/ /3/ /4/ /5/), fetched 11 Nov 2026; 45 questions with per-question explanations; correct letters embedded in the page markup (data-correct) and stated in each explanation — treated as claims to verify, never as evidence. This is a DIFFERENT sitting from 37aev (Lecturer in Computer Science, 23 May 2023) — a month later, with a different set of 45 questions. Date corroborated by the May–June 2023 Lecturer/SS test window (Lecturer CS 23-05-2023, built as 37aev; Female SS Biology 24-05-2023, built as 37aet; Female SS Chemistry 25-05-2023, built as 37aeu). No advertisement/serial number is stated on the source, so none is asserted. Every answer was derived and verified independently under the owner's 8 Nov 2026 standard. Answer balance (44 solved) A10/B13/C12/D9. Printed wording kept as filed (Q19 options print "0(n)", "0(log n)", "0(n2)", "0(n log n)" for O(...); Q28 option D "bytes"; Q40 option D "Rapid Application Development Process Model" with double space); delegation decisions recorded in the source file, all decided by the assistant under the owner's 8 Nov 2026 delegation.

1 Computer Science

The value of an automatic variable in C/C++ that is declared but not initialized will be _____.

- A. 0
- B. -1
- C. Unpredictable ✓ **Correct answer**
- D. None of these

A. Wrong: an uninitialised automatic variable does not default to 0 (that is only true for static/global variables).

B. Wrong: there is no rule that an uninitialised automatic variable holds -1.

C. Correct: an automatic (local) variable declared but not initialised holds a garbage/indeterminate value, so its value is unpredictable.

D. Wrong: option C is correct.

Question 2 Computer Science

Which of the following memory must be refreshed many times per second?

- A. Static RAM
- B. Dynamic RAM ✓ **Correct answer**
- C. EPROM
- D. ROM

A. Wrong: static RAM holds its value as long as power is supplied; it needs no refresh.

B. Correct: DRAM stores each bit in a capacitor that leaks charge, so it must be refreshed many times per second.

C. Wrong: EPROM is non-volatile read-only memory; it needs no refresh.

D. Wrong: ROM is non-volatile; it needs no refresh.

3 Computer Science

_____ interprets program instructions and initiates control operations.

- A. Input Unit
- B. Storage Unit
- C. ALU
- D. Control Unit ✓ **Correct answer**

A. Wrong: the input unit feeds data into the computer; it does not interpret instructions or initiate control operations.

B. Wrong: the storage unit holds data and instructions; it does not interpret them.

C. Wrong: the ALU performs arithmetic and logic operations; it does not interpret instructions or direct control.

D. Correct: the control unit interprets program instructions and initiates the control operations of the processor.

Question 4 Computer Science

The time required for the fetching and execution of one simple machine instruction is called?

- A. Delay Time
- B. CPU Cycle ✓ **Correct answer**
- C. Seek Time
- D. Real Time

A. Wrong: delay time is a general timing term, not the fetch-and-execute time of one instruction.

B. Correct: the time required for the fetching and execution of one simple machine instruction is one CPU cycle (CPU cycle time).

ek time is the time a disk head takes to move to a track.

D. Wrong: real time is a mode of processing, not the fetch-and-execute time of one instruction.

Question 5 Computer Science

Functionality performed by a "constructor" is _____.

- A. Construct a new class
- B. Construct a new object
- C. Construct a new function
- D. Initialize Objects ✓ **Correct answer**

A. Wrong: a constructor does not create a class; a class is a type definition.

B. Wrong in the strict sense: memory allocation creates the object; the constructor's own function is to initialise the object once created.

C. Wrong: a constructor does not create a function.

D. Correct: the functionality performed by a constructor is to initialise the object's members when the object is created.

Question 6 Computer Science

A graphic representation of an Information System is called?

- A. Flow Chart
- B. Pictogram
- C. Data Flow Diagram ✓ **Correct answer**
- D. Histogram

A. Wrong: a flowchart is a graphic representation of a process or algorithm, not of an information system.

pictogram is a chart using pictures to represent data, not a representation of an information system.

C. Correct: a data flow diagram is a graphic representation of an information system, showing how data flows through processes.

D. Wrong: a histogram is a bar chart of a frequency distribution, not a representation of an information system.

Question 7 Computer Science

Pointers are useful in _____?

- A. Locating Area on Disk
- B. Pointing mistakes in input data
- C. Traversing Linked List ✓ **Correct answer**
- D. All of these

A. Wrong: pointers address memory, not disk areas.

B. Wrong: pointers do not point out mistakes in input data.

C. Correct: pointers are the links between nodes, and they are used to traverse a linked list.

D. Wrong: options A and B are not uses of pointers.

Question 8 Computer Science

Which of the following tool(s) is not used in modeling the new system?

- A. Decision Tables
- B. Data Dictionary
- C. Data Flow Diagrams
- D. All of these

s given for this question, and none is taught. DEFECTIVE — excluded (no option is correct: Decision Tables, the Data Dictionary and Data Flow Diagrams are ALL standard system-modelling tools)

A. Cannot be excluded: decision tables ARE used in modelling a system.

B. Cannot be excluded: the data dictionary IS used in modelling a system.

C. Cannot be excluded: data flow diagrams ARE used in modelling a system.

D. Cannot be correct: it would mean all three tools are not used in modelling, which is false. The printed question has no correct option and is excluded as DEFECTIVE (decided by assistant under owner's 8 Nov delegation).

Question 9 Computer Science

Multiplexing technique used by AM and FM radios is _____.

- A. FDM ✓ **Correct answer**
- B. WDM
- C. TDM
- D. None of these

A. Correct: frequency division multiplexing is the analogue technique used by AM and FM radio — each station is given its own frequency band.

B. Wrong: wavelength division multiplexing is used in fibre optics, not in AM/FM radio.

C. Wrong: time division multiplexing is a digital technique; AM/FM radio is analogue.

D. Wrong: option A is correct.

Question 10 Computer Science

Which of the following is a form of DoS attack?

- A. Vulnerability attack

dwidth Flooding

- C. Connection Flooding
- D. All of these ✓ **Correct answer**

A. True in isolation: exploiting a vulnerability to deny service is a form of DoS attack.

B. True in isolation: flooding the bandwidth is a form of DoS attack.

C. True in isolation: flooding connections (for example SYN flooding) is a form of DoS attack.

D. Correct: vulnerability attacks, bandwidth flooding and connection flooding are all forms of denial-of-service attack.

Question 11 Computer Science

Elapsed time between initiating a query and receiving a response is called _____.

- A. Response Time ✓ **Correct answer**
- B. Waiting Time
- C. Processing Time
- D. Turnaround Time

A. Correct: response time is the elapsed time between initiating a query and receiving a response (the interval between submitting a request and the first response).

B. Wrong: waiting time is the time a process spends waiting in a ready queue.

C. Wrong: processing time is the time spent actually processing, not the elapsed time to a response.

D. Wrong: turnaround time is the total time from submission of a job to its completion.

Question 12 Computer Science

Which of the following are never inherited?

lic data members

- B. Constructor function ✓ **Correct answer**
- C. Void functions
- D. Overload + Operator

A. Wrong: public data members are inherited by a derived class.

B. Correct: a constructor is never inherited; a derived class can only call the base class constructor.

C. Wrong: void functions are inherited like any other member function.

D. Wrong: overloaded operators are inherited by a derived class.

Question 13 Computer Science

How many objects can be created from a abstract class?

- A. Zero ✓ **Correct answer**
- B. One
- C. Two
- D. As many as you want

A. Correct: an abstract class cannot be instantiated, so zero objects can be created from it (pointers and references to it are still allowed).

B. Wrong: not even one object can be created from an abstract class.

C. Wrong: no objects at all can be created from an abstract class.

D. Wrong: no objects at all can be created from an abstract class.

Question 14 Computer Science

In which of the storage placement strategies a program is placed in the largest available hole in the main memory

- B. First-fit
- C. Next-fit
- D. Worst-fit ✓ **Correct answer**

A. Wrong: best-fit places a program in the smallest hole that fits it.

B. Wrong: first-fit places a program in the first hole large enough.

C. Wrong: next-fit places a program in the next hole large enough after the last allocation.

D. Correct: worst-fit places a program in the largest available hole in main memory.

Question 15 Computer Science

Bankers algorithm in Operating Systems is used for_____.

- A. Deadlock prevention
- B. Deadlock avoidance ✓ **Correct answer**
- C. Deadlock recovery
- D. Mutual exclusion

A. Wrong: prevention avoids deadlock by imposing restrictions (such as denying one of the four conditions); the Banker's algorithm does something different.

B. Correct: the Banker's algorithm is a resource-allocation and deadlock-avoidance algorithm — it tests each request and grants it only if the system stays in a safe state.

C. Wrong: recovery is what happens after a deadlock has already occurred.

D. Wrong: mutual exclusion is one of the four conditions for deadlock, not what the Banker's algorithm does.

Question 16 Computer Science

Frames from one LAN can be transmitted to another LAN via _____.

- B. Bridge ✓ **Correct answer**
- C. Repeater
- D. Modem

A. Wrong: a router forwards packets between networks at the network layer; frames between LANs are handled by a bridge.

B. Correct: frames from one LAN can be transmitted to another LAN via a bridge, which forwards frames by MAC address.

C. Wrong: a repeater only regenerates signals within one LAN segment; it does not forward frames between LANs.

D. Wrong: a modem modulates/demodulates signals for transmission over telephone lines; it does not forward frames between LANs.

Question 17 Computer Science

Which transmission mode is used for data communication along telephone lines?

- A. Parallel
- B. Serial ✓ **Correct answer**
- C. Synchronous
- D. Asynchronous

A. Wrong: parallel transmission sends many bits at once over many wires; telephone lines have a single wire pair.

B. Correct: serial transmission sends one bit at a time, which suits the single wire pair of an ordinary telephone connection.

C. Wrong: synchronous is a timing mode of serial transmission, not the transmission mode itself.

Asynchronous is a timing mode of serial transmission, not the transmission mode itself.

Question 18 Computer Science

Which of the following device is used to connect to systems, especially if the systems have different protocols?

- A. Hub
- B. Bridge
- C. Gateway ✓ **Correct answer**
- D. Repeater

A. Wrong: a hub connects devices within one network; it does not translate between different protocols.

B. Wrong: a bridge connects similar LANs; it does not translate between different protocols.

C. Correct: a gateway is a network node that connects two networks with different transmission protocols.

D. Wrong: a repeater only regenerates signals; it does not connect systems with different protocols.

Question 19 Computer Science

The complexity of merge sort algorithm is _____.

- A. 0(n)
- B. 0(log n)
- C. 0(n2)
- D. 0(n log n) ✓ **Correct answer**

A. Wrong: merge sort is not linear time (the option prints "0(n)" for O(n)).

erge sort is not logarithmic time (the option prints "0(log n)" for O(log n)).

C. Wrong: merge sort is not quadratic time (the option prints "0(n2)" for $O(n^2)$).

D. Correct: the time complexity of merge sort is O(n log n) (the option prints "0(n log n)").

Question 20 Computer Science

Twisted pair, coaxial and fiber optic cables are the example of _____ transmission medium.

- A. Guided ✓ **Correct answer**
- B. Unguided
- C. Dispersed
- D. None of these

A. Correct: twisted pair, coaxial and fibre optic cables are guided transmission media — the waves are guided along a physical path.

B. Wrong: unguided media are wireless (radio, microwave, infrared), not cables.

C. Wrong: "dispersed" is not a class of transmission medium.

D. Wrong: option A is correct.

Question 21 Computer Science

In OSI model, as a data packet moves from lower to upper layers, headers are _____.

- A. Added
- B. Removed ✓ **Correct answer**
- C. Rearranged
- D. None of these

A. Wrong: headers are added when data moves DOWN the layers (encapsulation at the sender), not up.

s a data packet moves from lower to upper layers, headers are removed (decapsulation at the receiver).

C. Wrong: headers are not rearranged on the way up the layers.

D. Wrong: option B is correct.

Question 22 Computer Science

The transfer of information from memory to outside environment is _____.

- A. Read operation ✓ **Correct answer**
- B. Write operation
- C. Transfer operation
- D. None of these

A. Correct: the transfer of information from memory to the outside environment is a read operation.

B. Wrong: a write operation transfers information INTO memory, the reverse direction.

C. Wrong: "transfer operation" is not the standard term for this.

D. Wrong: option A is correct.

Question 23 Computer Science

In operating system, each process has its own _____ .

- A. Open files
- B. Address space and global variables
- C. Pending alarms, signals and signal handlers
- D. All of these ✓ **Correct answer**

A. True in isolation: each process has its own list of open files.

B. True in isolation: each process has its own address space (code, data, stack, heap).

olation: each process has its own pending alarms, signals and signal handlers.

D. Correct: each process has its own open files, address space and pending alarms/signals.

Question 24 Computer Science

The address of the next instruction to be executed by the current process is provided by the:

- A. CPU Registers
- B. Process stack
- C. Program Counter ✓ **Correct answer**
- D. Pipe

A. Wrong: CPU registers hold data and intermediate values, not the address of the next instruction.

B. Wrong: the process stack holds return addresses and local variables, not the address of the next instruction to execute.

C. Correct: the program counter holds the address of the next instruction to be executed, and is incremented after each instruction.

D. Wrong: a pipe is an inter-process communication channel, not a register holding the next instruction's address.

Question 25 Computer Science

A Relational Database consists of a collection of_____

- A. Tables ✓ **Correct answer**
- B. Fields
- C. Records
- D. Keys

relational database consists of a collection of tables (relations) containing rows and columns.

B. Wrong: fields (columns) are parts of a table, not what a relational database consists of.

C. Wrong: records (rows) are parts of a table, not what a relational database consists of.

D. Wrong: keys identify records within a table; they are not what a relational database consists of.

Question 26 Computer Science

Database _____ which is the logical design of the database, and the database _____ which is a snapshot of the data in the database at a given instant in time.

- A. Instance, Schema
- B. Relation, Schema
- C. Relation, Domain
- D. Schema, Instance ✓ **Correct answer**

A. Wrong: the order is reversed — the logical design is the schema, the snapshot of the data is the instance.

B. Wrong: the logical design is the schema, not a relation, and the snapshot is the instance, not the schema.

C. Wrong: neither "relation" nor "domain" fits either blank.

D. Correct: the database schema is the logical design of the database, and the database instance is a snapshot of the data at a given instant in time.

Question 27 Computer Science

Default TCP port number for HTTP is _____ .

- A. 65

- C. 85
- D. None of these ✓ **Correct answer**

A. Wrong: 65 is not the default HTTP port.

B. Wrong: 75 is not the default HTTP port.

C. Wrong: 85 is not the default HTTP port.

D. Correct: the default TCP port for HTTP is 80, which is not among the options.

Question 28 Computer Science

Multiplexing technique used for transmitting analog signals is _____.

- A. FDM & WDM ✓ **Correct answer**
- B. TDM & FDM
- C. WDM & TDM
- D. bytes

A. Correct: FDM (frequency division multiplexing) and WDM (wavelength division multiplexing) are the multiplexing techniques used for transmitting analogue signals.

B. Wrong: TDM (time division multiplexing) is a digital technique.

C. Wrong: TDM is a digital technique.

D. Wrong: "bytes" is not a multiplexing technique.

Question 29 Computer Science

An IPv4 address consists of:

- A. 4 bits
- B. 32 bits ✓ **Correct answer**
- C. 32 bytes

A. Wrong: an IPv4 address is far longer than 4 bits.

B. Correct: an IPv4 address consists of 32 bits (four 8-bit octets, written in dotted decimal notation).

C. Wrong: 32 bytes would be 256 bits.

D. Wrong: 8 bytes would be 64 bits.

Question 30 Computer Science

Encryption/ Decryption is performed by _____ layer of OSI.

- A. Application
- B. Session
- C. Presentation ✓ **Correct answer**
- D. Network

A. Wrong: the application layer provides services to the user, not encryption/decryption.

B. Wrong: the session layer manages sessions (dialog control), not encryption/decryption.

C. Correct: the presentation layer translates and formats data for the application layer, and handles encryption and decryption.

D. Wrong: the network layer handles routing, not encryption/decryption.

Question 31 Computer Science

In Operating Systems, absolute path starts from _____?

- A. Current Directory
- B. Root Directory ✓ **Correct answer**
- C. Present Directory
- D. None of these

path starting from the current directory is a relative path.

B. Correct: an absolute path specifies a file or directory location starting from the root directory.

C. Wrong: a path starting from the present (current) directory is a relative path.

D. Wrong: option B is correct.

Question 32 Computer Science

Semaphores are used to solve the problem of _____?

- A. Race condition
- B. Mutual exclusion
- C. Critical section ✓ **Correct answer**
- D. None of these

A. True in substance: semaphores prevent race conditions by controlling access to shared resources.

B. True in substance: semaphores provide mutual exclusion over a shared resource.

C. Picked: the canonical textbook key for this exact question is the critical section problem — semaphores are used to solve the critical-section problem in concurrent systems.

D. Wrong: options A, B and C are all what semaphores address. Picked by assistant under owner's 8 Nov delegation.

Question 33 Computer Science

Which of the following is a service not supported by Operating System?

- A. Protection
- B. Accounting
- C. Compilation ✓ **Correct answer**

A. Wrong: protection IS a service supported by the operating system.

B. Wrong: accounting (tracking resource usage) IS a service supported by the operating system.

C. Correct: code compilation is done by a compiler, not by the operating system.

D. Wrong: I/O operations ARE a service supported by the operating system.

Question 34 Computer Science

The process of converting binary data into digital signals is called

- A. Line coding ✓ **Correct answer**
- B. Multiplexing
- C. De multiplexing
- D. I/O operation

A. Correct: line coding is the process of converting binary data (a sequence of bits) into digital signals.

B. Wrong: multiplexing combines multiple signals onto one channel; it does not convert binary data into digital signals.

C. Wrong: demultiplexing separates a combined signal back into its parts; it does not convert binary data into digital signals.

D. Wrong: an I/O operation is data transfer to or from a device, not the conversion of binary data into digital signals.

Question 35 Computer Science

Time required to send one single bit is called _____

- A. Bit rate

d rate

- C. Bit interval ✓ **Correct answer**
- D. None of these

A. Wrong: bit rate is the number of bits transmitted per second, not the time to send one bit.

B. Wrong: baud rate is the number of signal changes per second, not the time to send one bit.

C. Correct: the bit interval is the time required to send one single bit.

D. Wrong: option C is correct.

Question 36 Computer Science

The loss of energy in a signal during transmission is called_____

- A. Distortion
- B. Attenuation ✓ **Correct answer**
- C. Amplification
- D. None of these

A. Wrong: distortion is a change in the shape of a signal, not a loss of its energy.

B. Correct: attenuation is the loss of energy (reduction in signal strength) during transmission.

C. Wrong: amplification increases signal strength — the opposite of a loss of energy.

D. Wrong: option B is correct.

Question 37 Computer Science

In Relational Databases, the tuples of the relations can be of_____ order.

- A. Any ✓ **Correct answer**

- C. Sorted
- D. Constant

A. Correct: in relational databases the tuples of a relation can be in any order — the order of the tuples does not matter.

B. Wrong: tuples need not be in the same order.

C. Wrong: tuples need not be sorted.

D. Wrong: tuple order is not constant.

Question 38 Computer Science

In case of Zero-address instruction method the operands are stored in _____.

- A. Registers
- B. Accumulators
- C. Stack ✓ **Correct answer**
- D. Cache

A. Wrong: a zero-address instruction does not hold its operands in general registers.

B. Wrong: operands in an accumulator belong to one-address (accumulator) instructions, not zero-address instructions.

C. Correct: in the zero-address instruction method the operands are stored on the stack (the top of the stack is implied by the instruction).

D. Wrong: a cache is a fast memory, not where zero-address operands are stored.

Question 39 Computer Science

In Software Engineering which one of the following is not a phase of Prototyping Model?

- A. Quick Design

ing ✓ **Correct answer**

- C. Prototype Refinement
- D. Engineer Product

A. Wrong: quick design IS a phase of the prototyping model.

B. Correct: "coding" is not a named phase of the prototyping model — its phases are quick design, building the prototype, user evaluation, prototype refinement and engineering the product.

C. Wrong: prototype refinement IS a phase of the prototyping model.

D. Wrong: engineering the product IS a phase of the prototyping model.

Question 40 Computer Science

Rapid Application Development (RAD) Model has _____ phases.

- A. 2
- B. 3
- C. 4
- D. 5 ✓ **Correct answer**

A. Wrong: the RAD model has more than two phases.

B. Wrong: the RAD model has more than three phases.

C. Wrong: the RAD model has more than four phases.

D. Correct: the RAD model has five phases — business modelling, data modelling, process modelling, application generation, and testing and turnover.

Question 41 Computer Science

_____ Network extends a private network across public networks?

- A. Local Area

ual Private ✓ **Correct answer**

- C. Enterprise Private
- D. Storage area

A. Wrong: a local area network covers a small area; it does not extend a private network across public networks.

B. Correct: a virtual private network (VPN) extends a private network across a public network such as the internet.

C. Wrong: "enterprise private" is not the network type that extends a private network across public networks.

D. Wrong: a storage area network connects storage devices; it does not extend a private network across public networks.

Question 42 Computer Science

Physical or logical arrangement of a network is _____.

- A. Routing
- B. Networking
- C. Topology ✓ **Correct answer**
- D. None of these

A. Wrong: routing is the choice of a path for data, not the arrangement of a network.

B. Wrong: networking is the general practice of connecting computers, not the arrangement of a network.

C. Correct: the physical or logical arrangement of a network is its topology.

D. Wrong: option C is correct.

43 Computer Science

_____ keyword is used to inherit a class in Java.

- A. Super
- B. Extends ✓ **Correct answer**
- C. This
- D. Implements

A. Wrong: super refers to the parent class's members, it is not the inheritance keyword.

B. Correct: in Java the extends keyword is used to inherit a class.

C. Wrong: this refers to the current object, it is not the inheritance keyword.

D. Wrong: implements is used to implement an interface, not to inherit a class.

Question 44 Computer Science

Which of these is supported by method overriding in Java?

- A. Abstraction
- B. Encapsulation
- C. Polymorphism ✓ **Correct answer**
- D. None of these

A. Wrong: abstraction is hiding complexity behind an interface; it is not what method overriding supports.

B. Wrong: encapsulation is bundling data and methods; it is not what method overriding supports.

C. Correct: runtime polymorphism is achieved through method overriding — a subclass method with the same name, parameters and return type as the parent's is chosen at run time.

D. Wrong: option C is correct.

45 Computer Science

IPv6 does not use_____ type of address.

- A. Broadcast ✓ **Correct answer**
- B. Multicast
- C. Anycast
- D. None of these

A. Correct: IPv6 does not use broadcast addresses — there is no concept of a broadcast address in IPv6; it uses multicast and anycast instead.

B. Wrong: IPv6 DOES use multicast addresses.

C. Wrong: IPv6 DOES use anycast addresses.

D. Wrong: option A is correct.

This paper remains the paper of the Khyber Pakhtunkhwa Public Service Commission. Ranjha Solutions branding is on this solved presentation only — the paper is not owned by Ranjha Solutions. KPPSC publishes the official question paper for this sitting — see the source note.

Past papers are **free** — no charge is taken from any student for papers. General Knowledge answers are as of the 2023 sitting.

Source: https://mcqsgalaxy.com/exam-paper/kppsc-lecturer-cs-june-2023/ (accessed 8 Nov 2026). See the source note on this page about the fold-in corrections.