

## PU M Tech Comp Science and Engineering

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105 PU\_2015\_376

What do you call the selected keys in the quick sort method?

- Inner Key
- Outer key
- Partition key
- Pivot key

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A comparison of frequency division and time division multiplexing system shows that:-

- FDM requires a lower bandwidth, but TDM has greater noise immunity
- FDM requires more multiplex while TDM requires band pass filter
- FDM has greater noise immunity and requires lower bandwidth than TDM
- FDM requires channel synchronization, while TDM has greater noise immunity

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The process of removing the deficiencies and loopholes in the data is called as:-

- Cleaning up of data
- Loading of data
- Aggregation of data
- Extracting of data

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What is the baud rate of the standard 10 Mbps Ethernet?

- 40 megabaud
- 10 megabaud
- 30 megabaud
- 20 megabaud

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Assume that a program will experience 200 failures in infinite time. It has now experienced 100 failures. The initial failure intensity was 20 failures/CPU hr. Then the current failure intensity will be:-

- 5 failures/CPU hr
- 40 failures /CPU hr
- 10 failures/CPU hr

- 20 failures/CPU hr

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Which UML diagram provides a variety of symbols and encompasses a number of ideas, all to model the changes which just one object goes through?

- Class
- State
- Package
- Object

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Which of the following signal is not standard RS-232-C signal?

- VDR
- CTS
- DSR
- RTS

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In a priority queue, insertion and deletion takes place at:-

- only at rear end
- any position
- only at front end
- front, rear end

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Let  $L_1 = \{10, 1\}$  and  $L_2 = \{011, 11\}$ . Then  $L_1, L_2 =$

- $\{10011, 1011, 111\}$
- $\{1011, 101, 10101\}$
- $\{1011, 0011, 1111\}$
- All of the above

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Data warehouse bus matrix is a combination of:-

- Facts and data marts
- Dimensions and data marts

- Dimensions and facts
- Dimensions and detailed facts

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What value would be stored in an integer variable "i" as a result of the following expression?

```
int i, j = 3; i = 4 + 2 * j/(j-1);
```

- 1
- 8
- 7
- 9

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The memory address of the first element of an array is called:-

- base address
- foundation address
- floor address
- first address

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The final form of testing COTS software is \_\_\_\_\_ testing.

- Beta
- Integration
- Alpha
- Unit

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The maturity levels used to measure a process are:-

- Initial, Stating, Defined, Managed, Optimized
- Primary, Secondary, Defined, Managed, Optimized
- Initial, Repeatable, Defined, Managed, Optimized.
- Managed Optimized

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In Two pass assembler the object code generation is done during the?

- Second pass

- First pass
- Zeroeth pass
- Not done by assembler

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A hand-shake based protocol for data transfer is an example of \_\_\_\_\_ type of data transfer.

- Parallel
- Asynchronous
- Synchronous
- Serial

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Which of the following is false related to Stack?

- Useful for nested loops, subroutine calls etc
- Stack Pointer points to the top most element of the stack
- Only PUSH and POP operations are applicable
- Implements FIFO

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Fractals deal with curves that are?

- irregularly regular
- regularly irregular
- Irregularly irregular
- Regularly regular

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Flow Control in data communications:-

- Can be implemented using a CSMA/CD Protocol
- Makes a channel with error
- Can be implemented using a Stop-and-Wait Protocol
- Makes a channel an error-free one

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Process is:-

- a job in secondary memory

- contents of main memory
- a program in execution
- Program in High level language kept on disk

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E-Choupal refers to:-

- Online reservation system for Airlines
- calling meeting of Surpanches electronically
- providing window of information to villagers and farmers in NIC network
- conducting Panchayat meeting using latest electronic gadgets

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How many nodes does a complete binary tree of level 5 have?

- 31
- 15
- 32
- 16

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What type of relationship exists between a Student table and Fees table?

- Many to many
- One to many and many to many
- One to many
- One to one

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Which relationship specifies an optional behavior?

- An aggregation
- An extend
- An inheritance
- A generalization

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If carrier modulated by a digital bit stream, has one of the possible phase of 0, 90, 180 and 270 degrees, then modulation called:-

- QPSK
- MSK
- BPSK
- QAM

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yacc is available as a command on the?

- DOS
- UNIX
- Windows
- MINIX

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Hue of color is related to?

- Saturation
- Incandescence
- Wavelength
- Luminance

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Decryption and encryption of data are the responsibility of which of the following layer ?

- Physical layer
- Presentation layer
- Data Link layer
- Session layer

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Which of the following switching techniques is most suitable for interactive traffic?

- Packet switching
- Circuit switching
- Message switching
- Context Switching

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What do you call, "where the Objects hide their inner workings of their operations from the outside world and from other objects"?

- Generalization
- Encapsulation
- Composition
- Polymorphism

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The mechanism that binds code and data together and keeps them secure from outside world is known as:-

- Inheritance
- Polymorphism
- Abstraction
- Encapsulation

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What is the output of the following program?

```
#include<stdio.h>

int c [10]={1,2,3,4,5,6,7,8,9,10};

main()
{ int a,b=0;
  for(a=0;a<10;++a)
  if(c[a]%2==1)
  b+=c[a];
  printf ("%d", b);}
```

- 25
- 20
- 52
- 24

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What is the output of the following statements?

```
for(l = 10; l++; l<15)
printf("%d", l);
```

- 910111213

- 1011121314
- 101112131415
- It will go to infinite loop

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Forty stations are on an Ethernet LAN. A 10-port bridge segments the LAN. What is the effective average data rate of each station?

- 2.0 Mbps
- 5.0 Mbps
- 1.0 Mbps
- 2.5 Mbps

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Which of the following is the most important when deciding on the data structure of a data mart?

- Metadata naming conventions
- XML data exchange standards
- Data access tools to be used
- Extract, Transform, and Load (ETL) tool to be used

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Which of the following TCP/IP Internet protocol is diskless machine uses to obtain its IP address from a server?

- X.25
- RIP
- ARP
- RAP

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In which addressing mode the operand is given explicitly in the instruction?

- Index mode
- Absolute mode
- Immediate mode
- Indirect mode

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Networks that use different technologies can be connected by using?



- Routers
- Packets
- Switches
- Bridges

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1 GB is \_\_\_\_\_ bytes.

- 1 073 741 826
- 1 073 741 828
- 1 073 741 821
- 1 073 741 824

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Which of the following is a LOOP statement of a C language?

- Do While
- While -Do
- For
- For and Do-While

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Which one of the following media is multidrop?

- Thick Coaxial cable
- Shielded Twisted pair cable
- Unshielded Twisted pair cable
- Fiber Optic cable

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If 1's are mapped in a k-map the Boolean function is in the form:-

- Subtraction and divide
- Product of sums
- Addition and subtraction
- Sum of products

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Which one manages both current and historic transactions?

- OLAP
- XML
- Spread sheet
- OLTP

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The SQL Expression Select distinct T. branch name from branch T, branch S where T. assets > S. assets and S. branch-city = DELHI, finds the name of:-

- all branches that have greater assets than allocated in DELHI
- all branches that have greater asset than any branch located in DELHI
- the branch that has the greatest asset in DELHI
- any branch that has greater asset than any branch located in DELHI

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int a [5]={1,2,3} what is the value of a[4]?

- 3
- Garbage value
- 1
- 0

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Registers, which are partially visible to users and used to hold conditional, are known as:-

- General purpose register
- PC
- Memory address registers
- Flags

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Which among the following literally means 'many forms', the concept that different objects can respond to the same message in different ways?

- Polymorphism
- Aggregation
- Composition
- Encapsulation

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Which of the following is an application of stack?

- Graph Coloring
- infix to postfix conversion
- Finding subset
- Scheduling

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Floating point is always interpreted to represent a number in the following form:-

- Me \* r
- E r \* m
- M \* e
- M \* re

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One of the main feature that distinguish microprocessors from micro-computers is:-

- Words are shorter in microprocessors
- Microprocessor does not contain I/O devices
- exactly the same as the machine cycle time
- Words are usually larger in microprocessors

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In the maintenance phase the product must be tested against previous test cases. This is known as \_\_\_\_\_ testing.

- Module
- Integration
- Regression
- Unit

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Match the following:-

- |                      |                           |
|----------------------|---------------------------|
| a. Data link layer   | i. Flow control           |
| b. Network layer     | ii. Node to node delivery |
| c. Transport layer   | iii. Mail services        |
| d. Application layer | iv. Routing               |

- a-ii, b-iv, c-iii, d-i
- a-ii, b-i, c-iii, d-iv
- a-ii, b-i, c-iv, d-iii
- a-ii, b-iv, c-i, d-iii

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Output file of the Lex is \_\_\_\_\_ is the input file is Myfile.

- Myfile.obj
- Myfile.yy.c
- Myfile.lex
- Myfile.e

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Type checking is normally done during?

- Syntax directed translation
- Code generation
- Syntax analysis
- Lexical analysis

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The disadvantage in using a circular linked list is:-

- It is possible to get into infinite loop.
- Time consuming
- Requires more memory space
- Last node points to first node.

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Which one of the following is not a key process area in CMM level 5?

- Technology change management
- Software product engineering
- Defect prevention
- Process change management

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The "PROJECT" operator of a relational algebra creates a new table that has always:-

- More columns than columns in original table
- Same number of rows as the original table
- Same number of columns as the original table
- More rows than original table

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What is the meaning of 'Hibernate' in Windows XP/Windows 7?

- Restart the computers in normal mode
- Shutdown the computer terminating all the running applications
- Shutdown the computer without closing the running applications
- Restart the computers in safe mode

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The employee information of an Organization is stored in the relation:-

```
Employee (name, sex, salary, deptname)
```

Consider the following SQL query

```
Select deptname from Employee Where sex = 'M' group by deptname  
having avg(salary) > {select avg(salary) from Employee}
```

Output of the given query corresponds to

- Average salary of employee more than average salary of the organization.
- Average salary of male employees in a department is more than average salary of the organization.
- Average salary less than average salary of the organization.
- Average salary of employee equal to average salary of the organization.

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The acronym ADSL stands for:-

- Asynchronous Data Specific language
- Aperture Distance of Satellite Link
- Asymmetric Digital Subscriber Line
- Analog and Digital Synchronous Link

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In asymmetric key cryptography, the private key is kept by:-

- receiver

- Sender
- sender and receiver
- all the connected devices to the network

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Which is not true about the memory management?

- segmentation suffers from external fragmentation
- virtual memory is used in multi-user system
- paging suffers from internal fragmentation
- segmented memory can be paged

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ICMP is primarily used for:-

- forwarding
- error and diagnostic functions
- addressing
- none of the mentioned

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Thrashing:-

- can always be avoided by swapping
- can be caused by poor paging algorithms
- always occurs on large computers
- is a natural consequences of virtual memory system

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A subset of a network that includes all the routers but contains no loops is called:-

- Spanning tree
- spider structure
- spider tree
- none of the above

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Converting bitmaps to drawn object is more difficult and is called:-

- autotracing

- Dithering
- Morphing
- Leading

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if a relation is in BCNF then it is in:-

- 3 NF
- 1 NF
- 1 NF and 2 NF
- 2 NF

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With QBE, inserting records from one or more source tables into a single target table can be achieved by:-

- Update action query
- Insert action query
- Append action query
- Make table action query

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The postfix equivalent of the prefix \* + ab - cd is?

- ab + - cd \*
- ab + cd \* -
- abcd + - \*
- ab + cd - \*

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The minimum number of cards to be dealt from an arbitrarily shuffled deck of 52 cards to guarantee that three cards are from some same suit is?

- 9
- 8
- 3
- 12

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If  $a = O_{xaa}$  and  $b = a << 1$  then:-

- a=b-1
- b=a-1
- b=2a
- b=a/2

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An OR gate can be imagined as:-

- MOS transistors connected in series
- Switches connected in series
- switches connected in parallel
- All of the above

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Let A and B be any two arbitrary events then which one of the following is true ?

- $P(A \cup B) = P(A) + P(B)$
- $P(A \cap B) = P(A) \cdot P(B)$
- $P(A \cup B) \geq P(A) + P(B)$
- $P(AB) = P(A \cap B) \cdot P(B)$

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\_\_\_\_\_ is a shorthand representation of music stored in numeric form.

- MIDI
- Audio Resolution
- Digital Audio
- Mono files

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The complexity of binary search algorithm is?

- n
- $n^2$
- $\log n$
- $n \log n$

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JavaBeans Event Model is also known as:-



- The Event Foundation Model
- The Event Delegation Model
- The Event Service Model
- The Event Beans Model

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An attribute or set of attributes within one relation that matches the candidate key of some (possibly the same) relation:-

- Candidate key
- Super Key
- Primary key
- Foreign key

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Memory management is:-

- replaced with virtual memory on current system
- not used on multiprogramming systems
- critical for even the simplest operating system
- not used in modern operating system

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If G is an undirected planer graph on n vertices with e edges then?

- $e \leq 3n$
- $e \leq n$
- $e \leq 2n$
- None of the above

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Which of the following supports the capability of returning pointers to other interfaces through COM object?

- Query interface
- Hardware interface
- Software interface
- Query Control

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An actor in an animation is a small program invoked \_\_\_\_\_ per frame to determine the characteristics of some object in the animation.

- once
- 30 times
- twice
- 60 times

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Which of the following formulas in Omega notation best represent the expression  $n^2+35n+6$ ?

- $\Omega (n^3)$
- $\Omega (35)$
- $\Omega (n^2)$
- $\Omega (n)$

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Express the formula  $(n - 2)*(n - 4)$  using  $\theta$  notation:-

- $\theta (n)$
- $\theta (8)$
- $\theta (\log n)$
- $\theta (n^2)$

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Suppose requests have recently arrived for data on cylinders 25, 46, 12, and 3, in that order, and that the read-write head is currently at cylinder 20. If the disk scheduling policy is SSTF, the outstanding requests will be serviced in the order

- 25, 12, 3, 46
- 3, 12, 25, 46
- 25, 46, 12, 3
- 25, 46, 3, 12

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What term is used to describe an  $O(n)$  algorithm?

- Non Polynomial Deterministic
- Linear
- Constant

- Logarithmic

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Can we read a data item at any location of a list within a constant time (i.e.  $O(1)$ )?

- Yes, only if the list is implemented by pointers (i.e. linked-list)
- Yes
- No, we need  $O(n)$  computation steps no matter what kind of implementation is used
- Yes, only if the list is implemented by an array

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Which of the following is not an objective for building analysis models?

- Develop a solution for the problem
- Describe customer requirements
- Define set of software requirements that can be validated
- Establish basis for software design

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The asymptotic notation for defining the average time complexity is:-

- Symmetric
- Reflexive
- Equivalence
- Transitive

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Sequential search has a time complexity of  $O(n)$ , and binary search has a time complexity of  $O(\log(n))$ . What difference will it make when the size  $n$  is 1000?

- As  $n$  is 1000, binary search is 10 times as slow as sequential search
- As  $n$  is 1000, binary search is 10 times as fast as sequential search
- As  $n$  is 1000, binary search is twice as fast as sequential search
- As  $n$  is 1000, binary search is 100 times as fast as sequential search.

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In the top level Domains, .nom specifies:-

- non government organizations
- Personal sites

- Online companies and business
- Commercial entities

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For every context free grammar (G) there exists an algorithm that passes any  $W \in L(G)$  in number of steps proportional to:-

- $|w|^2$
- $|w|$
- $|w|^3$
- $|n|w|$

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The entity relationship diagram

- Depicts functions that transform the data flow
- Depicts relationships between data objects
- Indicates system reactions to external events
- Indicates how data are transformed by the system

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In wireless distribution system:-

- there is no access point
- multiple access point are inter-connected with each other
- only one access point exist
- none of the above

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An image is  $1024 \times 800$  pixels with 3 bytes/pixel. Assume the image is uncompressed. How long does it take to transmit it over a 10 -Mbps Ethernet?

- 19.66 seconds
- 0.1966 seconds
- 196.6 seconds
- 1.966 seconds

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In a certain system, process A has just arrived at time 0, process B at time 3, and process C at time 6. A needs 5 seconds in the CPU, B 3 seconds, and C 1 second. All processes are totally CPU-bound and process-switching time is negligible, so that after 9 seconds all processes have completed. At what time

does process B complete if the process-scheduling algorithm is preemptive SJF and the quantum is 1 second?

- 7
- 9
- 8
- 6

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Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?

- ALOHA
- CDMA
- CSMA/CA
- none of the above

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Which of the following is not the guiding principle of software project scheduling?

- Effort validation
- Time allocation
- Compartmentalization
- Market assessment

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The rapid application development model is:-

- A high-speed adaptation of the linear sequential model
- A useful approach when a customer cannot define requirements clearly
- Same as component-based development
- Same as incremental model

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Read the following statements carefully and pick the correct option:-

- I. The worst time complexity of the Floyd's algorithm is  $O(n^3)$ .
- II. The worst time complexity of the Warshall's algorithm is  $O(n^3)$ .

- (I) is true and (II) is not true always
- (I) is true but (II) is false
- (I) is false but (II) is true

- Both (I) and (II) are true

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In a fully connected mesh network with  $n$  devices, there are \_\_\_\_\_ physical channels to link all devices.

- $n(n-1)/2$
- $2n+1$
- $2n$
- $n(n+1)/2$