

Information Technology

1 In a population of N families, 50% of the families have three children, 30% of the families have two children and the remaining families have one child. What is the probability that a randomly picked child belongs to a family with two children?

- A) $3/23$
- B) $6/23$
- C) $3/10$
- D) $3/5$

Answer : (B)

2 Which one of the following is NOT shared by the threads of the same process ?

- A) Stack
- B) Address Space
- C) File Descriptor Table
- D) Message Queue

Answer : (A)

3 A subnet has been assigned a subnet mask of 255.255.255.192. What is the maximum number of hosts that can belong to this subnet?

- A) 14.
- B) 30
- C) 62
- D) 126

Answer : (C)

4 A software organization has been assessed at SEI CMM Level 4. Which of the following does the organization need to practice beside Process Change Management and Technology Change Management in order to achieve Level 5 ?

- A) Defect Detection
- B) Defect Prevention
- C) Defect Isolation
- D) Defect Propagation

Answer : (B)

5 Suppose that two parties A and B wish to setup a common secret key (D-H key) between themselves using the Diffie-Hellman key exchange technique. They agree on 7 as the modulus and 3 as the primitive root. Party A chooses 2 and party B chooses 5 as their respective secrets. Their D-H key is

- A) 3
- B) 4
- C) 5
- D) 6

Answer : (C)

6 We have two designs D1 and D2 for a synchronous pipeline processor. D1 has 5 pipeline stages with execution times of 3 nsec, 2 nsec, 4 nsec, 2 nsec and 3 nsec while

the design D2 has 8 pipeline stages each with 2 nsec execution time. How much time can be saved using design D2 over design D1 for executing 100 instructions?

- A) 214 nsec
- B) 202 nsec
- C) 86 nsec
- D) -200 nsec

Answer : (A)

7 Which of the following statements is FALSE regarding a bridge

- A) Bridge is a layer 2 device
- B) Bridge reduces collision domain
- C) Bridge is used to connect two or more LAN segments
- D) Bridge reduces broadcast domain

Answer : (D)

8 What is the availability of a software with the following reliability figures?

Mean Time Between Failure (MTBF) = 25 days

Mean Time To Repair (MTTR) = 6 hours

- A) 1%
- B) 24%
- C) 99%
- D) 99.009%

Answer : (B)

9 In a particular Unix OS, each data block is of size 1024 bytes, each node has 10 direct data block addresses and three additional addresses: one for single indirect block, one for double indirect block and one for triple indirect block. Also, each block can contain addresses for 128 blocks. Which one of the following is approximately the maximum size of a file in the file system?

- A) 512 MB
- B) 2 GB
- C) 8 GB
- D) 16 GB

Answer : (D)

10 On a TCP connection, current congestion window size is Congestion Window = 4 KB. The window size advertised by the receiver is Advertise Window = 6 KB. The last byte sent by the sender is LastByteSent = 10240 and the last byte acknowledged by the receiver is LastByteAked = 8192. The current window size at the sender is

- A) 2048 bytes
- B) 4096 bytes
- C) 6144 bytes
- D) 8192 bytes

Answer : (B)

11 Which of the following statements is TRUE about CSMA/CD

- A) IEEE 802.11 wireless LAN runs CSMA/CD protocol
- B) Ethernet is not based on CSMA/CD protocol
- C) CSMA/CD is not suitable for a high propagation delay network like satellite network
- D) There is no contention in a CSMA/CD network

Answer : (C)

12 How many pulses are needed to change the contents of a 8-bit upcounter from 10101100 to 00100111 (rightmost bit is the LSB)?

- A) 134
- B) 133
- C) 124
- D) 123

Answer : (B)