Bangladesh Bank
Assistant Maintenance Engineer
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1. Suppose we have a 16 KB of data in a direct mapped cache with 4 blocks. Determine the size of the tag, index and offset fields if we are using a 32-bit architecture. (CS-computer architecture)
https://www.cs.umb.edu/cs641/notes09.html

2. Describe cut off, saturation and active region of operation of a transistor with diagram. Explain the working principal of ab n-channel JFET with various values of V as and V ds . (Electrical-JFET)

https://instrumentationtools.com/transistor-cut-off-saturation-active-regions/

https://byjus.com/physics/junction-field-effect-transistor/

https://www.geeksforgeeks.org/jfet-and-its-characteristics/

3. Explain parity method for error detection. Write down the bit strings of "Delta" using ASCII. (ECE- Data Communication)
https://www.scribd.com/doc/202115848/ECE-513-Data-Communications-Part-1

4. Suppose that a digitized TV picture is to be transmitted from a source that uses a matrix of 480 times 500 picture elements (pixels), where each pixel can take on one of 32 intensity values. Assume that 30 pictures are sent per second. (This digital source is roughly equivalent to broadcast TV standards that have been adopted.) Find the source rate R (bps). (ECE-Telecommunication)

https://www.chegg.com/homework-help/questions-and-answers/suppose-digitized-tv-picture-transmitted-source-uses-matrix-480-times-500-picture-elements-q19639624

https://brainly.com/question/33582527

5. One of the drawbacks of a small packet size is that a large function of link bandwidth is consumed by overhead bytes. To this end, supposed that the packet consists of P bytes and 5 bytes of header. Consider sending a digitally encoded voice source directly. Suppose the source is encoded a constant rate of 128 kbps. Assume each packet is entirely filled before the source sends the packet into the network. The time required to fill a packet is the packetization delay. Determine the packetization delay for length L = 1500 bytes (roughly corresponding to maximum- sized Ethernet packet). (CSE-Computer Network)
https://www.chegg.com/homework-help/questions-and-answers/ch-67-20-points-problem-explore-use-small-packets-voice-ip-applications-one-drawbacks-smal-q112064831

6. Explain IaaS, PaaS, and SaaS with respect to cloud computing. (CSE-Cloud Computing)
https://www.geeksforgeeks.org/difference-between-iaas-paas-and-saas/

7. Define a virtual machine with a neat diagram, explain the working of VM. What are the benefits of a VM? (CSE-Server, Data Center)
https://cloud.google.com/learn/what-is-a-virtual-machine

8. What are the challenges in optimizing energy efficiency of data centers? Explain! (CSE-Server, Data Center)
https://www.sciencedirect.com/science/article/abs/pii/S1364032115016664

9. A bank has association with two different service providers as their payment gateways. The bank hires Mr. X to audit the payment gateway based on risk

and threat detection. Which possible scenarios Mr. X will face? (CSE-Payment Gateway)

https://www.geeksforgeeks.org/payment-gateway/

10. Verification and validation are two process areas at CMMI level 3. For both of these areas provide a) definition b) a description of how you can fulfill these areas in your software testing activities. (CSE-Software Engg.)

https://bioinfopublication.org/files/articles/1_1_1_BIOINFO_SC.pdf

https://www.tutorialspoint.com/cmmi/cmmi-maturity-levels.htm

11. $\frac{4(\sqrt{6}+\sqrt{2})}{\sqrt{6}-\sqrt{2}} - \frac{2+\sqrt{3}}{2-\sqrt{3}} = ?$

12. A father has divided his property between his two sons A and B. A invests the amount at a compound profit of 8% p.a. B invests the amount of 10% pa. simple profit. At the end of 2 years, the profit received by B is Taka 1336 more than the interest received by A Find A's share in the fathers property of Taka 25000.

13.The percentage profit earned by selling an article for Taka 1920 is equal to the percentage loss incurred by selling the same article for Taka 1280. At what price should the article be sold to make a 25% profit ?

14. AD is the longest side of the triangle ABD shown in the figure, what is the length of longest side of▲ ABC?