

Week 11

1.

Register Sharing helps in reducing cost.

- a. True
- b. False

Ans – a. True

Explanation - Since all registers are not being used in same state, therefore connectivity costs can be reduced by combining the registers together.

2.

In connection merging, we can merge two connections if they are active at the same time.

- a. True
- b. False

Ans – b. False

Explanation – We cannot merge two connections if they are active at the same time because a connection cannot carry 2 separate data value at the same time.

3.

In Resource Constrained Scheduling given the time, we need to minimize the resources used.

- a. True
- b. False

Ans – b. False

Explanation – In Resource Constrained Scheduling we have resources specified to us and we need to minimize metrics like time, power etc.

4.

Windowing is a technique for image analysis.

- a. True
- b. False

Ans – b. False

Explanation - Windowing is a technique used to concentrate the processing in a desired part of image and also ignoring the non-desired part or non-interested part of the image. In this, an electronic mask is created around a small area of an image.

5.

In Huffman Coding, we traverse the tree from root to leaf to obtain binary code of leaf's value, we append 1 for left traversal and 0 for right traversal.

- a. True
- b. False

Ans – b. False

Explanation - In Huffman Coding, we traverse the tree from root to leaf to obtain binary code of leaf's value, we append 0 for left traversal and 1 for right traversal.

6.

- 011
- 010
- 100
- 101

Explanation - recording the path of the node from root to leaf, the code word for character 'a' is found to be 011.

CCD (Charge Coupled Devices) is an example of dynamic memory

Explanation – CCD is an example of dynamic memory because contents of it changes with time.

8.

Zero Bias Adjustment falls under Post Processing.

- a. True
- b. False

Ans – b. False

Explanation – Zero Bias Adjustment falls under pre-processing, it is done due to the reason that no manufacturing process is perfect so a pixel in CCD sensor being black may give a non zero value reading, thus to take corrective measure for the image captured Zero Bias Adjustment is performed.

9.

No of bits required for standard encoding if the size of character set is N is

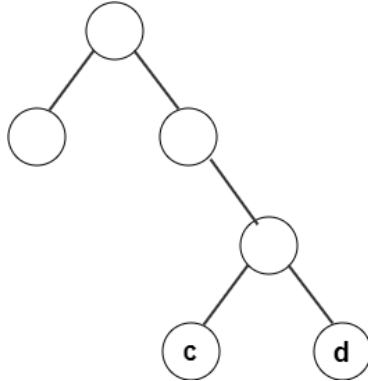
- a. N
- b. $2N$
- c. $\log_2(N)$
- d. N^2

Ans – c. $\log_2(N)$

Explanation – we need to satisfy the equation $2^x \geq N$ where value of x is smallest. As each bit in binary has 2 values thus x bits can produce 2^x discrete combination.

10.

What is the codeword for 'c'?



- a. 111
- b. 101
- c. 110
- d. 011

Ans – c. 110

Explanation - recording the path of the node from root to leaf, the code word for character 'a' is found to be 110.