

B.E./B.TECH. Degree Examination, December 2020

Third Semester

IT18301 – IT ESSENTIALS

(Regulation 2018)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions**PART A - (8 X 2 = 16 marks)**

1. How many grey shades be represented with 8 bits?
 - a. 16
 - b. 64
 - c. 256
 - d. 32
2. What is the encoded form of the following image?

$$X = \begin{vmatrix} 510 & 620 & 980 \\ 24 & 96 & 87 \\ 430 & 320 & 182 \end{vmatrix}$$

$$\text{a. } \begin{vmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 1 & 0 & 0 \end{vmatrix} \quad \text{b. } \begin{vmatrix} 0 & 0 & 1 \\ 1 & 1 & 1 \\ 0 & 1 & 0 \end{vmatrix} \quad \text{c. } \begin{vmatrix} 1 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 1 & 0 \end{vmatrix} \quad \text{d. } \begin{vmatrix} 1 & 1 & 1 \\ 0 & 0 & 0 \\ 1 & 0 & 0 \end{vmatrix}$$

3. What will be the output of the following PHP code?

```
<?php
$emp = "39 employees";
$additional_emp = 9;
$total_emp = $emp + $additional_emp;
echo "$total_emp";
?>
```

- a. Error
 - b. 48
 - c. 39 employees
 - d. 48 employees
4. What are the main benefits of OSI model?
 - a. Troubleshooting the network is easy.
 - b. Interpreting vendor explanations of product functionality.
 - c. Developing new functions or services for a particular layer is easy.
 - d. All the above.
 5. Write a HTML code to create a mail link on a web page and explain how nested webpage is created using HTML?
 6. Differentiate Constant and Variable in PHP with example.

7. What would be the minimum distance between the centers of two cells with the same band of frequencies if cell radius is 4 km and the reuse factor is 12?
8. What is the difference between CDMA and GSM?

PART B - (4 X16 = 64 marks)

09. (a) Write a HTML code to divide your browser window into three vertical sections (16) using div and do the following operations
1. Create a login form in the 1st section.
 2. Create an image link for any social media website in the 2nd section.
 3. Create a menu bar with hover effects in the 3rd section.

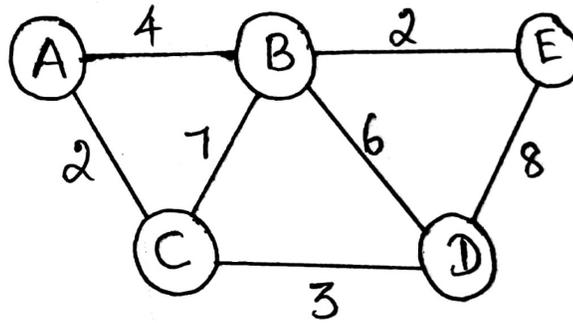
In how many ways a CSS can be integrated to a HTML web page? Explain with suitable examples by adding different styles for the above operations.

(OR)

- (b) Design a website for an old age home using frame and form, which should accept (16) donation from the people for 1day lunch and medical assistance expense in the 1st frame and it should also inform the donor how the donation has been spent in the 2nd frame. Add minimum 5 style attributes for the form elements and frames. Draw the layout for your web page and write the necessary code.
10. (a) (i) Write a PHP program to declare an array of integers, to sort them in a (6) descending order and to display the sorted array using for-each.
- (ii) Create a form to accept an integer as input and check whether the number is (10) an Armstrong number or not using JavaScript. If the user leaves the input box blank or if the user types any character input, then it should display an error alert (alert box).

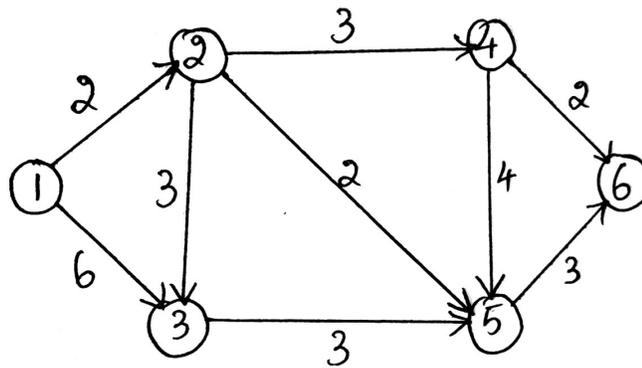
(OR)

- (b) (i) Create a HTML from “resultstatus.html” with a text box and a submit button (10) to accept the registration number of the student. Write a “resultstatus.php” code to check the status of the result from the table (database) to display whether the student has “PASS” or “FAIL” status. Assume that the MYSQL database “my_db” has the table “result_table” with 3 columns STUD_NAME, REG_NO and RESULT_STATUS.
- (ii) Write a PHP script to get the count of number of lines and words in a file. (6)
11. (a) State the major difference between Distance Vector Routing and Link State (16) Routing. Discuss in detail about LSR and find the shortest path from Node A to all other Nodes using Dijkstra’s algorithm.



(OR)

- (b) (i) Compare and contrast different types of switching methodologies in network communication. (8)
- (ii) Find the shortest path from Node 1 to all other Nodes using Dijkstra's algorithm. (8)



12. (a) (i) What is the advantage of GPRS over GSM? (4)
- (ii) How does a mobile unit communicate to a public telephone system using GSM? Explain. (12)

(OR)

- (b) (i) Discuss how call roaming service is carried out in a cellular network. (6)
- (ii) Compare and contrast the sequence of the generations of cellular networks with their improvements. (10)