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|---|--|----------------------|-----------|------------|
|   | A. Sequence<br>B. Decision   | C. Loop<br>D. Nested |           |            |
| <b>SECTION B</b><br><b>4Qx5M= 20 Marks</b>  |  |                      |           |            |
| Q11   | What is computer Software? Explain system software and application software with examples.   |                      | <b>5</b>  | <b>CO1</b> |
| Q12   | Write a short note on Microsoft PowerPoint. List any three functions.  |                      | <b>5</b>  | <b>CO1</b> |
| Q13   | Explain network topology with diagram? Differentiate between star and bus topology.  |                      | <b>5</b>  | <b>CO2</b> |
| Q14   | Discuss the main features of SPSS.   |                      | <b>5</b>  | <b>CO1</b> |
| <b>SECTION-C</b><br><b>3Qx10M=30 Marks</b>  |  |                      |           |            |
| Q15   | Compute the hexadecimal equivalent of the given binary numbers:<br>i. 1011010101111<br>ii. 1111101100001   |                      | <b>10</b> | <b>CO2</b> |
| Q16   | Discuss the role of an operating system with respect to following functions:<br>a) Process Management<br>b) Security Management  |                      | <b>10</b> | <b>CO1</b> |
| Q17   | Compute ciphertext using Vigenere Cipher technique, if the plaintext is “we are discovered save yourself” and key is “deceptive”.<br><b>OR</b><br>In a public key system, perform encryption and decryption using the RSA algorithm for $p = 7$ ; $q = 17$ ; $e = 11$ ; $M = 11$ .   |                      | <b>10</b> | <b>CO3</b> |
| <b>SECTION-D</b><br><b>2Qx15M= 30 Marks</b> |  |                      |           |            |
| Q18   | Suppose that you have trained a robot to carry a box of 40 tapes. If each tape contains 7 gigabits data and the speed of robot is 18km/hour, then for what range of distances does robot can have a higher data rate than a transmission line whose data rate is 14 megabytes per second? What would be the effect on the range of distances if:<br>a) The capacity of each tape is doubled.<br>b) The speed of robot is doubled; and<br>c) The data rate of the transmission line is doubled. |                      | <b>15</b> | <b>CO2</b> |
| Q19   | Design an algorithm which generates odd numbers between 2 and 20 and then prints them in the standard output. It should also print total sum.<br><b>OR</b><br>Draw a flowchart for the problem of printing even numbers less than 20. It should also calculate their sum and count.  |                      | <b>15</b> | <b>CO3</b> |