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 Name of Examination : **Winter 2020** - (Preview)

 Course Code & Course Name : **ET303U - Digital Communication**

 Generated At : **18-04-2022 17:00:15**

 Maximum Marks : **60**

 Duration : **3 Hrs**
[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

1.) Solve all sub -questions

- a) Draw and explain block diagram of digital communication systems. [05]
- b) Explain BFSK transmitter with neat diagram. [05]
- c) i). Write merits of QPSK. [02]
OR
ii). Represent the data 100111010 using following data formats (i) Unipolar RZ (ii) Split phase Manchester. [02]

2.) Solve any three sub -questions

- a) Explain inter-symbol interference. [04]
- b) Derive the expression for output bit rate ' r_0 ' in case of quasi synchronous multiplexers. [04]
- c) Draw and explain block diagram of transmitter and receiver of MSK system. [04]
- d) Explain TDMA in details. [04]

3.) Solve any three sub -questions

- a) What are pseudo-noise sequences? Why they are used in spread spectrum modulation. [04]
- b) State and explain sampling theorem. [04]
- c) With the help of neat diagram explain generation of 16-QAM signal. [04]
- d) Explain delta modulation with its demerits. [04]

4.) Solve any three sub-questions

- a) Explain concept and types of digital multiplexer. [04]
- b) Explain ASK system. [04]
- c) With the help of neat diagram explain interpretation of the eye pattern. [04]
- d) Explain the difference between slow hopping and fast hopping [04]

5.) Solve any three sub-questions

- a) Explain operation of unscrambler with neat diagram. [04]
- b) Give advantages and disadvantages of DPSK. [04]
- c) Explain various types of transmission media. [04]
- d) Compare PCM, DM, ADM digital modulation techniques [04]

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