

M.Sc. S.Y. (Electronics) (CBCS Pattern) Sem-IV
PSELT402 Core-XII Paper-II : Digital Communication

P. Pages : 1

Time : Three Hours



GUG/W/22/11368

Max. Marks : 80

- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw a neat and well labelled diagrams wherever necessary.

Either

1. a) Explain unit impulse function and its shifting properties. 8
b) Explain energy spectral and power spectral density in digital signals. 8

OR

- c) What is convolution? 8
Explain convolution properties.
d) Explain the following signals: 8
i) Analog and digital signals, ii) Periodic and aperiodic signal.

Either

2. a) Draw block diagram and explain elements of digital communication. 8
b) State and prove sampling theorem. 8

OR

- c) Explain the generation and detection of PWM with suitable diagram. 8
d) Draw the block diagram of Pulse Code Modulation (PCM) and explain it. 8

Either

3. a) Explain the QPSK generator with suitable diagram. 8
b) Explain slope overloaded and granular noise. 8

OR

- c) Explain the Delta modulation. State its advantages. 8
d) Explain MSK transmitter and receiver. 8

Either

4. a) What is entropy? 8
Explain entropy of source.
b) State and prove Shannon's coding theorem. 8

OR

- c) Write a note on, 8
i) PN sequence, and ii) Direct sequence.
d) What is use of syndromes? 8
Explain syndrome decoding.

5. a) Explain the time convolution properly. 4
b) Explain eye pattern in digital communication. 4
c) Differentiate between the PSK and FSK. 4
d) Write short note on Huffman code. 4
