

SEAT No. _____

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Sardar Patel University

B.Sc. (semester-V) CBCS Examination oct.- 2018

29/10/2018, Monday

10:00 am to 1:00 pm

Electronics & Communication

US05CELC04: Digital communication system

Maximum Marks: 70

Note: Figure to the right indicates full marks.

Q-1 Choose the correct Answer. [10]

1. The techniques used for the sampling are _____.
a) instantaneous b) flat top c) natural. d) all of above
2. ASK is the result of combination of shift keying and _____.
a) amplitude modulation b) analog modulation c) digital modulation d) none
3. The standard data rate of a voice channel is _____ in PCM system.
a) 64 kbps b) 32 kbps c) 16 kbps d) 8 kbps
4. BPSK system modulates the rate of _____.
a) 1 bit/symbol b) 2 bit/symbol c) 3 bit/symbol d) None
5. In a pulse amplitude modulation _____.
a) Amplitude of pulse train is varied c) frequency of pulse train is varied
b) width of pulse train is varied d) none
6. Which of the following data is correct for TDM (time division multiplexing)?
a) digital data transmitted b) analog data transmitted c) both a and b d) none
7. The modulation techniques used to converts he analog signal in to digital signal is called as _____.
a) PAM b) PCM c) PWM d) None
8. FDM stands for _____.
a) Finite differential method b) frequency division multiplexing c) Frequency data manager d) Frequency determine multiplexing
9. How many voltage levels are present in PWM (pulse width modulation)?
a) 3 b) 2 c) 1 d) 4
10. Frequency shift keying is mostly used in _____.
a) Radio transmitting b) telephony c) telegraphy d) none

Q-2 Answer in short.(Any ten) [20]

1. Give reason ideal sampling is not suitable for transmission purpose.
2. Give the difference between source coding and line coding.
3. Give only the basic element of PPM signal.

(P.T.O)

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4. What is aliasing effect? How it can avoid?
5. What do you meant by Quantization?
6. Define Nyquist rate.
7. Give the classification of pulse modulation techniques.
8. Give the types of Digital modulation techniques.
9. Distinguish between two basic multiplexing techniques. (FDM and TDM)
10. Give an account of RZ and NRZ coding format.
11. What is DC wandering? When it is arising?
12. What is the limitation of TDM (Time Division Multiplexing)

Q-3 What do you mean by interpolation? Derive interpolation formula for reconstruction of original signal from sampled signal. [10]

OR

Q-3 State and prove sampling theorem in time domain. [10]

Q-4 (a) Discuss in detail pulse code modulation and demodulation with necessary diagram and waveform. [05]

(b) Discuss in detail generation and detection of PAM signal. [05]

OR

Q-4 (a) Write a short note on: Companding. [05]

(b) Explain the basic element of PWM signal. [05]

Q-5 (a) Explain coherent binary shift keying in detail. [05]

(b) Explain coherent binary ASK (Amplitude shift keying) in detail. [05]

OR

Q-5 Explain in detail binary phase shift keying with necessary diagram. [10]

Q-6 (a) Explain formation of group in FDM (frequency division multiplexing). [05]

(b) Write a short note on: Time division multiplexing. [05]

OR

Q-6 Explain different types of line encoding formats used in telephone line transmission. [10]

