

S.Y. M.Sc.(Physics) (CBCS Pattern) Sem IV
PSCPHYT15.4-Core Elective : Applied Electronics-II

P. Pages : 2

Time : Three Hours



GUG/S/18/20180

Max. Marks : 80

1. EITHER

- a) Explain the block diagram of digital system. State sampling theorem and its applications in pulse code modulation system. **8**
- b) Explain the classification of pulse digital modulation technique with their unique features used in communication. **8**

OR

- e) Explain noise with mathematical interpretation of noise? What is the effect of noise in PCM and delta modulation and Demodulation. **8**
- f) Explain the application of sample and hold in quantization of signal. How quantization process are implemented with quantization level in PCM and delta modulation. **8**

2. EITHER

- a) Explain the communication networking with their classification based on speed of data transmission. **8**
- b) Explain the digital multiplexing and multiple access concept. How the FDMA with multiple signal application used in mobile and satellite. **8**

OR

- e) What is the difference between ARPNET and ISDN, discuss in detail. **8**
- f) Explain the digital multiplexing and multiple access concepts with TDMA. **8**

3. EITHER

- a) Explain the functional block diagram of 8086 with pin configuration. **8**
- b) Explain minimum mode and maximum mode configuration of 8088? Comment on real mode operation and protected mode memory operation. **8**

OR

- e) What is memory segmentation and is used in programming application? Explain general purposed and special purpose resistor with physical address calculation. **8**
- f) Explain 1, 2, 3 byte instruction in arithmetic group, logical group and control transfer group instruction. **8**

4. Either
- a) Discuss memory organization with their classification how address bus and data bus selection configuration used in memory expansion. 8
 - b) What is interfacing? Explain the pins used in interfacing with 8255 PPI. 8
- OR**
- e) What is UART? Elaborate your answer with functional block diagram of UART. 8
 - f) Explain the interrupt structure and its expansion using 8259 A PIC. 8
5. All questions are compulsory.
- a) What is the importance of quantization noise calculation. 4
 - b) What is ALOHA and Slotted ALOHA. 4
 - c) Explain t-state, m-state and execution cycle with timing diagram for 8086. 4
 - d) Differentiate between soft and hard interrupt. 4
