

**6235**  
**BOARD DIPLOMA EXAMINATION**  
**JUNE - 2019**  
**DIPLOMA IN ELECTRONICS AND COMMUNICATION ENGINEERING**  
**ANALOG AND DIGITAL COMMUNICATION SYSTEMS**  
**THIRD SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. **State the importance of Fourier series**
2. **An AM radio transmitter radiates 2 KW of signal. If the carrier power is 1.2 KW. Find the modulation index**
3. **Define (i) SNR (ii) noise figure**
4. **Define bit rate and dynamic range for PCM system**
5. **List the advantages and disadvantages of FSK**
6. **Define overhead and efficiency of data communication system**
7. **Define (i) Sensitivity (ii) Selectivity and (iii) Fidelity**
8. **What is image frequency rejection ratio?**
9. **State three differences between multiplexing and multiple access**
10. **Draw the block diagram of time division multiplexing**

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each question carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. **(a) Define angle modulation and state the different types of angle modulation?**  
**(b) Explain noise triangle in FM**
12. **Derive an equation for AM wave in time domain**
13. **(a) State the advantages and disadvantages of SSB modulation technique?**  
**(b) State the need of DSB-SC technique?**

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14. a) State the advantages and disadvantages of digital communication system

(b) Compare PAM, PPM and PWM

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15. (a) Draw the block diagram of ASK modulator and explain

(b) Draw the block diagram of ASK coherent demodulator and explain the demodulation process

16. (a) State the need of automatic volume control (AVC)?

(b) Draw the circuit diagram of envelop detector and explain the process of envelop detector in AM receiver

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17. (a) State the need of automatic volume control (AVC)?

(b) Draw the circuit diagram of foster seely discriminator and explain the process of demodulation in FM receiver

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18. (a) Draw the block diagram of frequency division multiplexing?

(b) Explain the process of frequency division multiplexing technique using above block diagram

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