**1289**

**Code : 15EC33T**

*Register Number* | | | | | | | |

**III Semester Diploma Examination, April/May-2018**

# ANALOG COMMUNICATION

**Time : 3 Hours ]** **[ Max. Marks : 100**

*Note :* (i) Answer any **six** full questions from Part – **A**
(ii) Answer any **seven** full questions from Part – **B**



## PART – A

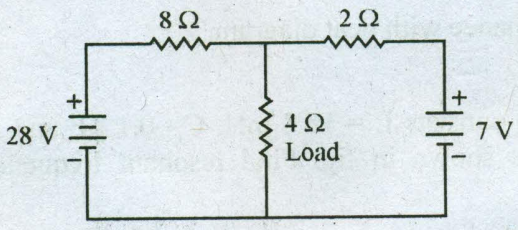
**6 × 5 = 30**

**(Answer any six questions from Part-A)**



1. State and explain maximum power transfer theorem. **5**

2. Draw the Norton's equivalent circuit for the network shown in the figure across 4 Ω load. **5**






3. Derive an expression for resonant frequency for a series resonant circuit. **5**

4. Write a note on attenuators. **5**

5. Explain co-axial cable with diagram. **5**

6. Define reflection co-efficient and standing wave ratio. **5**

7. Explain the working principle of parabolic reflector with suitable diagram. **5**

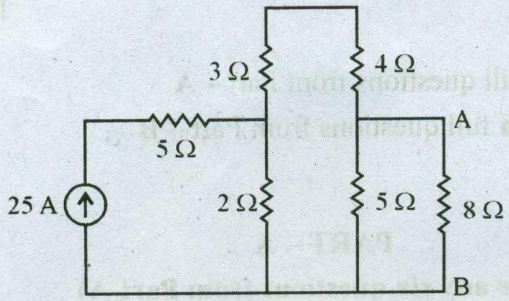
8. Explain ground wave propagation. **5**

9. Write a note on VSB and mention its advantages and disadvantages. **5**

## PART – B
**(Answer any seven full questions from Part-B)**

10. State Thevenin's theorem. Write the steps to reduce any linear internal network into its equivalent Thevenin's network. **10**

11. Using Norton's theorem find current through 8Ω resistor for the circuit shown in figure. **10**



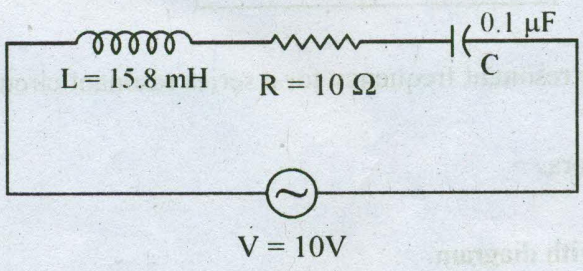



12. (a) Design constant KT type LPF with cut-off frequency 4 KHz and characteristics impedance of 600 Ω. **5**

(b) Explain parallel resonance with neat diagram. **5**



13. (a) A series RLC circuit consists L = 15.8 mH, C= 0.1 μF and R = 10Ω and line voltage V = 10V as shown in fig. Find resonant frequency and current at resonance. **5**




(b) Mention the applications of attenuator. **5**

14. Explain the need of impedance matching in a transmission line. Discuss single stub and double stub matching in a line. **10**

15. (a) Write features of the Yagi – Uda antenna. **5**

(b) Define polarization and isotropic radiators, directivity, power gain, and antenna resistance. **5**

16. (a) Derive the expression for AM waves. 5
(b) Explain the need of modulation. 5

17. (a) Explain the working of linear diode detector circuit with the help of waveform. 5
(b) Write a short note on SSBSC. 5

18. (a) State the demerits of FM over AM. 5
(b) Write a note on pre-emphasis and de-emphasis. 5

19. (a) Explain the Foster – Seeley method of FM detection. 5
(b) Write a note on Ratio detector. 5

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