

**B.Tech. AEROSPACE ENGINEERING  
(BTAE)**

**Term-End Examination**

**December, 2016**

**BAS-007 : CNS – ATM SYSTEMS**

*Time : 3 hours*

*Maximum Marks : 70*

**Note : Answer seven questions in all. Questions no. 1 and 2 are compulsory.**

**1. What do the following terms stand for ? 12×1=12**

- (a) ICAO
- (b) RNP
- (c) HSI
- (d) TACAN
- (e) MLS
- (f) GLONASS
- (g) IFR
- (h) IFF
- (i) VMC
- (j) GAGAN
- (k) PAPI
- (l) RADAR

2. Explain any *six* from the following :  $6 \times 3 = 18$
- (a) EM spectrum
  - (b) Airway
  - (c) Transponder
  - (d) Homing
  - (e) Windsock
  - (f) Marker beacons
  - (g) Controlled airspace
  - (h) Runway threshold
3. Define Amplitude Modulation. Derive an expression for modulation index in case of AM. 8
4. (a) What are the limitations to NDB functioning ? 4
- (b) A 500 W carrier is amplitude modulated to a depth of 70%. Calculate the total power in the modulated wave. 4
5. Explain the functioning of DME with the help of a block diagram. 8
6. Write short notes on the following :  $2 \times 4 = 8$
- (a) ATU
  - (b) Bandwidth of AM signal

7. Describe the following in brief : 2×4=8
- (a) SRE
  - (b) NAVSTAR GPS Receiver
8. (a) Explain the fundamentals of MTI in Radar. 4
- (b) What is the duty cycle of a radar with a pulse width of 4  $\mu$  sec and a pulse repetition time of 8 m sec ? 4
9. Explain the operation of PAR in aiding ground controlled approach. 8
10. (a) What is DGCA ? What are its functions ? 4
- (b) What are the actions to be taken by ATC unit in case of an emergency descent of an aircraft ? 4
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