

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

**Term-End Examination**

00193

June, 2018

**BAS-007 : CNS – ATM SYSTEMS**

*Time : 3 hours*

*Maximum Marks : 70*

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

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1. What do the following terms stand for ? 12×1=12
- (a) GAGAN
  - (b) ADF
  - (c) MTI
  - (d) DVOR
  - (e) VORTAC
  - (f) WAAS
  - (g) VTC
  - (h) NOTAM
  - (i) PAPI
  - (j) MLS
  - (k) VFR
  - (l) RNP

2. Explain any **six** from the following : 6×3=18
- (a) EM spectrum
  - (b) Glide slope
  - (c) Flight recorder
  - (d) Homing
  - (e) Marker beacons
  - (f) Artificial horizon
  - (g) Controlled airspace
  - (h) Airway
3. (a) What are the components of the AM spectrum ? 4
- (b) A broadcast radio transmitter radiates 10 kW when the modulation percentage is 60. How much of this is carrier power ? 4
4. Explain in detail the functioning of the ADF system. 8
5. (a) Explain how accurate navigation is possible using GPS. 4
- (b) What are the terrain conditions for siting an NDB ? 4
6. Write short notes on any **two** of the following : 2×4=8
- (a) RADAR
  - (b) TACAN
  - (c) Secondary radar

7. Explain the following in brief : 2×4=8
- (a) Cardioid pattern
  - (b) Doppler effect
8. (a) Explain the fundamentals of MTI in a radar. 4
- (b) What is the duty cycle of a radar with a pulse width of  $3 \mu$  sec and pulse repetition time of 6 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 in case of emergency descent of aircraft ? 4
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