B.TECH. (AEROSPACE ENGINEERING) (BTAE)

Term-End Examination

December, 2013

BAS-007 : CNS - ATM SYSTEMS

Time : 3 hours   *Maximum Marks : 70*

Note :   *Answer **seven** questions in total. Question **1** and **2** are compulsory.*

1.   What do the following terms stand for ?   **1x12=12**
   (a)   ICAO
   (b)   MTI
   (c)   DVOR
   (d)   VORTAC
   (e)   GPS
   (f)   UTC
   (g)   VFR
   (h)   FIR
   (i)   NOTAM
   (j)   WAAS
   (k)   VASI
   (l)   PPI

2.   Explain **any six** :   **3x6=18**
   (a)   Attitude
   (b)   Glide slope
   (c)   Radar cross section
   (d)   Marker beacon
   (e)   Taxiway
   (f)   Artificial horizon
   (g)   Runway touchdown point
   (h)   Clutter

3. Explain in detail the functioning of ADF system. 8

4. (a) What are the components of the AM 4
spectrum ?
 (b) A broadcast radio transmitter radiates 4
10 kW when the modulation percentage is
60. How much of this is carrier power ?

5. Write short notes on **any four** of the following : **2x4=8**
 (a) FM
 (b) SRE
 (c) Secondary RADAR
 (d) MLS
 (e) Doppler effects

6. (a) Explain how accurate navigation is possible 4
using GPS.
 (b) What are the sources of error in GPS ? 4

7. (a) Explain Doppler effect. How is it used to 4
obtain relative velocity of a target?
 (b) Calculate the average power of a radar with 4
peak transmitted power of 100 kW and
duty cycle of 0.0005.

8. Explain the functioning of ILS. 8

9. (a) What is DGCA? What are its functions ? 4
 (b) What actions are to be taken by ATS ground 4
control in case of air to ground
communications failure ?

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