Code No: 138CG

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, September - 2020
GLOBAL POSITIONING SYSTEM
(Electronics and Communication Engineering)

Time: 2 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks

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1. Draw the functional block diagram of the Master Control Station. Also explain the functions of each block. [15]

2.a) Explain the trilateration method to estimate GPS receiver position in 3D.
b) Compare GPS and GALILEO system with respect to satellite constellation and signal structure. [8+7]

3.a) Explain the characteristics of C/A code.
b) Derive the equation for ionospheric delay for phase range measurement starting from the refractive index. [5+10]

4. Draw the schematic functional block diagram of the GPS receiver. List the signal processing functions of the GPS receiver. [15]

5. Explain the following errors in GPS receivers:
a) Ionospheic errors b) Tropospheric errors c) SA errors. [15]

6.a) With the help of a neat diagram explain Wide Area DGPS.
b) Compare GEO uplink and down link systems. [10+5]

7.a) How the GEO orbit can be determined by geometric analysis.
b) Explain the RINEX format of observation and navigation data files. [8+7]

8. Describe the steps involved in receiver position estimation using Lease Squares Approximation method. [15]

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