

M.E. DEGREE EXAMINATIONS: APRIL / MAY 2009

Third Semester

COMMUNICATION SYSTEMS**P07CME09 Global Positioning Systems****Time: Three Hours****Maximum Marks: 100****Answer ALL the Questions:-****PART A (20 x 1 = 20 Marks)**

1. The GDOP approach is inversely proportional to the
 - A. square of a body
 - B. volume of a body
 - C. triangular of a body
 - D. rectangular of a body
2. A continuous global positioning capability, the required number of satellite is
 - A. 24
 - B. 48
 - C. 72
 - D. 12
3. The number of JPO segment consists of
 - A. five
 - B. four
 - C. two
 - D. three
4. FGCC test related to
 - A. C/A code pseudo range
 - B. C/A code carrier
 - C. P-code carrier phase
 - D. Y-code carrier phase
5. WGS – 84 was established through
 - A. Doppler
 - B. Kepler
 - C. Snell
 - D. Newton
6. Solar radiation pressure relates to
 - A. gravitation
 - B. non gravitation
 - C. thermal
 - D. humidity
7. The minimum number of sites in a global network is
 - A. 10
 - B. 6
 - C. 4
 - D. 12
8. The almanac data are updated at least every
 - A. 10 days
 - B. 16 days
 - C. 6 days
 - D. 7 days
9. The W-code is used for
 - A. encryption
 - B. decryption
 - C. modulation
 - D. CRC
10. The C/A code is repeated every
 - A. second
 - B. microsecond
 - C. millisecond
 - D. nanosecond

11. PRN signal is processed with
A. PLL B. clipper C. oscillator D. amplifier
12. Z-tracking techniques is
A. semi-codeless B. uni-codeless C. bi-codeless D. quasi-codeless
13. Tropospheric refraction by dual method is
A. possible B. better C. good D. not possible
14. The antenna phase centre varies with respect to incoming
A. Satellite signals B. Radar signals
C. beam signals D. Doppler frequency
15. Multipath is caused by
A. reflection surfaces B. refracting surfaces
C. fading D. composite signal
16. Geometric effect of the Antenna orientation on the carrier phase is investigated by
A. Geiger B. Clark C. Ashby D. Wu et al
17. In surveying with GPS, the concept of point positioning is
A. trilateration in space B. triangle in space
C. square in space D. cube in space
18. An extension of DGPS is
A. WADGPS B. MADGPS C. LADGPS D. LRDGPS
19. Airborne GPS provides coverage for
A. 12 hour B. 24 hour C. 36 hour D. 8 hour
20. OTF is the most advanced techniques in GPS surveying which is to resolve
A. phase ambiguities B. frequency deviation
C. timing error D. amplitude level

PART B (5 x 16 = 80 Marks)

21(a) Explain the space segment in GPS with necessary system identification.

(OR)

21(b) Explain the control segment in GPS with various station details.

22(a) Draw and analysis the Keplerian orbit

(OR)

22(b) Explain the concept of disturbing accelerations in satellite orbits

23(a) Explain the Geometrical interpretation of phase pseudo range in GPS Observables

(OR)

23(b) Explain the Ephemerides with necessary parameter tables

24(a) With neat diagram, explain the multipath effect and its mathematical model.

(OR)

24(b) Explain atmospheric monitoring and antenna phase centre off set.

25. Explain about follows in brief

(a) (i) Gravity field mapping (8)

(ii) Air borne GPS (8)

(OR)

(b) (i) Atmosphere occultation (8)

(ii) Space borne GPS (8)
