

Roll No: -----



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination –April, 2017

Program/course: B.Tech ASE+AVE

Subject: Guidance and Navigation for Aerospace Vehicles

Code : AVEG 451

No. of page/s: 2

Semester – VIII

Max. Marks : 100

Duration : 3 Hrs

Section – A (Each question carry 5 marks)

(4 * 5 = 20)

Short Answers

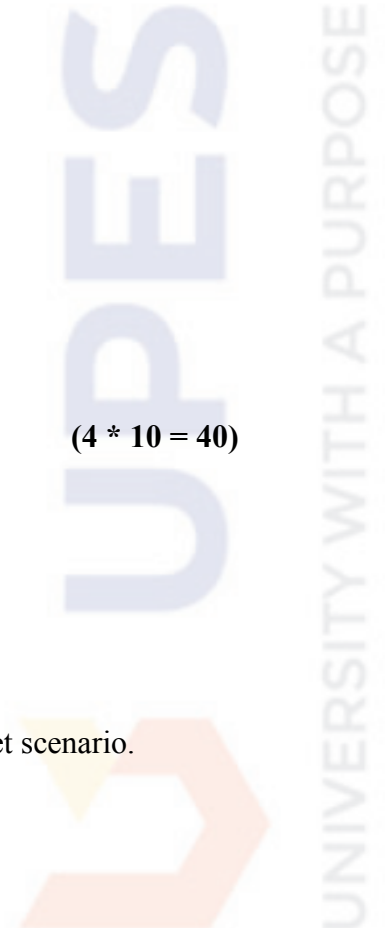
1. What is a collision triangle and inverse collision triangle?
2. Explain the following terms
 - a. Dead Reckoning
 - b. Celestial navigation
 - c. Pilotage
3. What is blind zone and when does it occur?
4. Explain how DGPS differs from the traditional GPS.

Section – B (Each question carry 10 marks)

(4 * 10 = 40)

Long Answers

5. Compare the difference between ILS and MLS.
6. What is the philosophy behind the Omega Navigation.
7. Derive the expression for the effect of lethal radius for a missile-target scenario.
8. Explain the working principle of Radio Altimeter in detail.



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Section – C
Long Answers

(2 * 20 = 20)

9. Explain the following:
- i. Mechanical Gyro
 - ii. Ring Laser Gyro
 - iii. Fibre Optic Gyro

(OR)

Explain the Working principle of Accelerometer and also explain its types in detail.

10. Explain the Working Principle of Global Positioning System and its various segments in Detail.

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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination – April, 201

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No. of page/s: 2

Semester –

VIII

Max. Marks

: 100

Duration

: 3 Hrs

Section – A (Each question carry 5 marks)

(4 * 5 = 20)

Short Answers

1. Explain how DGPS differs from the traditional GPS.
2. What is the basic philosophy behind Collision of missile and a target?
3. What is blind zone and when does it occur?
4. Explain the following terms
 - a. Rigidity
 - b. Precision
 - c. Gimbal Lock

Section – B (Each question carry 10 marks)

(4 * 10 = 40)

Long Answers

1. Explain the working principle behind the Microwave Landing System in detail.
2. What is the philosophy behind the conversion of body frame into earth fixed frame and explain.
3. Derive the expression for the effect of lethal radius for a missile-target scenario.
4. Explain the working principle of VOR in detail.

Section – C
Long Answers

(2 * 20 = 20)

5. Explain the following:
- iv. Mechanical Gyro
 - v. Ring Laser Gyro
 - vi. Fibre Optic Gyro

(OR)

Explain the Working principle of Accelerometer and also explain its types in detail.

6. Explain the Working Principle of Global Positioning System and its various segments in Detail.