PRINCIPLES OF NAVIGATION-II (SEMESTER - 4)

CS/BNS/SEM-4/BNS-404/09
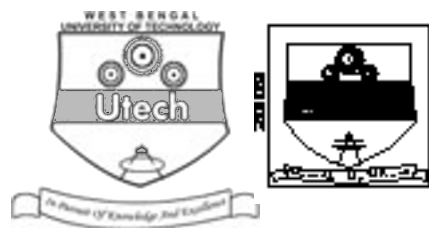
1. ....
   Signature of Invigilator

2. ....
   Signature of the Officer-in-Charge

Reg. No.

Roll No. of the Candidate

Time : 3 Hours]   [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Objective type. You have to answer the questions in the space provided **marked Answer Sheet**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

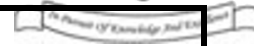### No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY
Marks Obtained

			Group – A						Group – B		Group – C			Total Marks	Examiner's Signature
Question Number															
Marks Obtained															

....
Head-Examiner/Co-Ordinator/Scrutineer

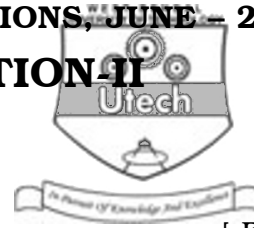| 4619 (12/06) |

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ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

PRINCIPLES OF NAVIGATION-II

SEMESTER - 4

Time : 3 Hours]   [Full Marks : 70

GROUP – A

(Objective Type Questions)

1.   Answer the following briefly : $10 \times 1 = 10$

   i)   Define equinoctial.

   ii)   State Kepler's second law.

   iii)   Explain obliquity of the ecliptic.

   iv)   When will you advance and retard the clocks at sea ?

   v)   What is sideral day ?

   vi)   What do you mean by back angle altitude ?

   vii)   Define Prime vertical.

   viii)   What is rational horizon ?

   ix)   What do you mean by Dynamic Mean Sum ?

   x)   Define Azimuth.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following questions. $3 \times 5 = 15$

2.   What do you understand about eplimeral time ?

3.   a)   What do you understand by hour angle (HA) ?

   b)   The planet venus was on the meridian of an observer situated in longitude 62°E. At the same instant RA of venus is 87°. Find the GHA of a star, the SHA of which then was 162°.

4

4. a) What is the significance of amplitude ?

   b) Prove : sin (Amp) = sin (Decl) × sec (Lat).

5. a) What is diamond of error in PL ?

   b) What are the errors you can think of while transferring PL ? Briefly discuss.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following questions. $3 \times 15 = 45$

6. List the corrections to be applied to sext alt. of star, planet, sun and moon. How do you obtain their values ? 15

7. a) What is the relation among true sun, mean sun and dynamical mean sun ?

   b) Explain how the motion of the earth affect our mean solar time. 8 + 7

8. a) Why there is difference between theoritical and visual sunrise time ? Which one occurs first ? 8

   b) A ship sailing on a course 320° (*T*). At 0830 hr a sun sight was taken and LHA was observed 280°, while the ship was at 50°N. At 0900 hr again sun sight was taken and LHA was observed 287° 18$^{\prime}$. Calculate ship's speed. 7

9. a) On 23rd September, 1992, in DR 23° 40$^{\prime}$ N 161° 56$^{\prime}$ E, the sextant meridian altitude of the sun's lower limb was 66° 10·6$^{\prime}$. If *IE* was 2·3$^{\prime}$ on the arc and *HE* was 10·5$^{\prime}$ m, find the latitude and the PL. 8

   b) On 20th January, 1992 in DR 54° 20$^{\prime}$ S, 46° 27$^{\prime}$ W, the sunset bearing 234° (C) if variation was 3° W. Find deviation of the compass. 7

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END