


Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: GEODESY AND SURVEYING

Semester: VI

Program: B-TECH GIE

Time : 03 hrs.

Course Code: PEGS-3017

Max. Marks: 100

No of pages : 03

Instructions: Carefully read the questions and answer. All the questions are compulsory in section A and Section B & C for Q.9 and Q.11 has internal choices

SECTION A

(5Qx4M=20Marks)

S. No.		Mar ks	CO
Q 1	Define the following terms in context with surveying; Geoid and Ellipsoids	4	CO1
Q 2	Fill in the blanks with suitable answer: I. The cubit was used to make pyramid, the mean errors was	4	CO1
	II. The..... Reference system is considered earth as oblate spheroid along N_S axis		
	III. The Reference frame is provide a time/space orientation or ration of earth surface data		
	IV. The..... axis is the length of shortest radius of an ellipse.		
Q 3	Distinguish between the following terms: a) Tape and Chain b) Ranging rod and Offset rods	4	CO2
Q 4	Select correct choice (True or False) for the following questions: a. The abney level is used to measure the inclination of slope angle b. In chain surveying tie lines are primarily provided to avoid triangulation from chain lines c. Clothoid is an ideal transition curve. d. The plumb bob is used for measuring angular distance in surveying.	4	CO2
Q 5		4	CO3

	Chose the correct answer from the given (MCQ) choice and write:							
	<p>Which type needle is used in a surveyor compass</p> <p>SECTION B</p> <p>Which are oblique offset's taken along the line of the wall of a building.</p> <p>The angle between reference vector and projected vector on reference plane.</p>	<p>Magnetic</p> <p>Chaining</p> <p>Azimuth</p> <p>Vertical line</p>	<p>Edge bar</p> <p>Pegs</p> <p>Meridian</p> <p>Agonic</p> <p>Horizontal line</p>					
Q 6	<p>a) Construct a diagonal scale R.F=1/6000 to read meter. The length of the scale should be sufficient to read up to 800 meters. Show lengths representing 650 m and 350 m in the Diagonal scale.</p> <p>b) Describe in brief basic principles of survey and their applications.</p>		<p>Linear</p> <p>Range tie</p> <p>Zenith</p> <p>10</p> <p>CO4</p>					
Q 7	Discuss in brief the classification of levelling and its significance in geodesy and surveying.		<p>10</p> <p>CO5</p>					
Q 8	<p>i) Discuss in brief the major classification of survey.</p> <p>ii) The line AB is measure a distance of 49.56 ft using break chaining. The tape is not accurately level and the plum bob end is 2ft lower than actual positions. Estimate the correct distance of the line AB.</p>		<p>10</p> <p>CO3</p>					
Q 9	<p>Explain in brief methods of theodolite survey and their importance in geodesy and surveying;</p> <p>OR</p> <p>Discuss in brief the procedure and classification of Tachometer survey</p>		<p>10</p> <p>CO4</p>					
<p>SECTION-C</p> <p>(Q.10 is compulsory Q.11 answer a OR b c 2Qx20M=40 Marks)</p>								
Q 10	<p>i) Explain in brief the significance of following terms in linear measurements :a) Chaining b) Offset c) Ranging d) Traverse</p> <p>ii) Describe briefly the methods of seismic survey in context with geodesy.</p>		<p>20</p> <p>CO5</p> <p>CO6</p>					
Q.11	<p>a) Explain in brief procedure and methods of magnetic survey and its significance in geodesy surveying.</p> <p>OR</p> <p>b) In Field measured horizontal length of a line CD was 45.75 M, used steel tape of nominal length of 30 M when the slope angle was 3°45' and the mean temperature and tension applied were respectively 30° C and 100 N. If the standard length of the tape was 30.15M at 35° C and 55 N tension. Determine the correct horizontal length. Tape Weight = 0.18 N/m² Cross sectional area = 2 mm² E= 2 X 10⁵ N/mm² and $\alpha=1.12 \times 10^{-5}$ per</p> <p>c) A compass traverse ABCDEA done run anticlockwise and following bearings are observe. Determine the local attraction and correct all the bearings of exterior and interior angles.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>Line</th> <th>FB</th> <th>BB</th> </tr> </thead> <tbody> <tr> <td>AB</td> <td>150° 15'</td> <td>330° 15'</td> </tr> </tbody> </table>	Line	FB	BB	AB	150° 15'	330° 15'	<p>20</p> <p>CO6</p>
Line	FB	BB						
AB	150° 15'	330° 15'						

		BC	20° 30'	200° 30'	
		CD	295° 45'	115° 45'	
		DE	218° 38'	38°38'	
		EA	120° 30'	300° 30'	