

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 14CE2001
Sub. Name : Surveying

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

Q. No.	Questions				Course outcome	Marks
PART-A (40X1=40 MULTIPLE CHOICE QUESTIONS)						
1.	The horizontal distance between two consecutive contours is termed as				CO2	
	a. Contour		c.horizontal interval	d.contour line		(1)
2.	Curvature correction is always				CO2	
	a. additive		c. either additive or subtractive	d.None of these		(1)
3.	Least count of leveling of staff				CO1	
	a. 0.005m		c.0.001m	d.None of these		(1)
4.	The curvature of the earth is taken into account when the extent of area is more than				CO2	
	a. 50km ²		c.150km ²	d.250km ²		(1)
5.	In simpsons formula the no of ordinate must be				CO2	
	a. even		c.both odd and even	d.none		(1)
6.	Volume computed by prismoidal method is considered				CO2	
	a. exact		c.average	d.none		(1)
7.	The line of collimation and axis of the telescope should be				CO1	
	a. parallel		c.perpendicular	d.none		(1)
8.	By arithmetical check ,we can ensure the accuracy of				CO3	
	a. field work		c.both a and b	d.none		(1)
9.	The BM fixed at the end of a day's work is called the				CO3	
	a. arbitrary		c.temporary	d.none		(1)
10.	The operation of levelling across any river is termed				CO3	
	a. reciprocal		c.check	d.longitudinal		(1)
11.	The correction due to curvature in levelling is				CO3	
	a. d ² /2R		c. d ² /R	d. d ² /4R		(1)
12.	If the horizontal distance between the staff point and the point of observation is d, then the error due to curvature of earth is proportional to				CO3	
	a. d		c.1/d	d.1/d ²		(1)
13.	Face left position is also called				CO2	
	a. telescope inverted		c. telescope reversed	d.none		(1)
14.	The contour interval for a particular map is				CO2	
	a. kept constant		c.made irregular	d.all the above		(1)
15.	Fine adjustment in a theodolite is done by				CO1	
	a. focusing screw		c.clamp screw	d.none		(1)
16.	For improved accuracy the included angle is measured by				CO1	
	a. reiteration method	b.repetation method	c.deflection angle method	d.none		(1)
17.	Staff reading over a station where elevation is known is called as				CO2	
	a. Fore sight	b. Back Sight	c. Intermediate sight	d.none of these		(1)

18.	What is MSL				CO1	
	a. Measured sea level	b. Monitored sea level	c. Mean sea level	d. None of these		(1)
19.	Hydrographical surveying deal with mapping of				CO3	
	a. Heavenly bodies	b. Hills	c. Large water bodies	d. none		(1)
20.	Datum adopted in India is the mean sea level as				CO3	
	a. Calcutta	b. Madras	c. Mumbai	d. Karachi		(1)
21.	An ideal vertical curve to join two gradients, is				CO1	
	a. hyperbolic	b. circular	c. parabolic	d. elliptical		(1)
22.	If S is the length of a subchord and R is the radius of simple curve, the angle of deflection between its tangent and sub-chord, in minutes, is equal to				CO2	
	a. $171.9 S/R$	b. $1718.9 S/R$	c. $573 S/R$	d. $573 R/S$		(1)
23.	An imaginary line joining the points of equal elevation on the surface of the earth, represents				CO3	
	a. contour surface	b. contour gradient	c. contour line	d. level line		(1)
24.	In chain surveying field work is limited to				CO1	
	a. angular measurements only	b. both linear and angular measurements	c. all the above.	d. linear measurements only		(1)
25.	One of the tacheometric constants is additive, the other constant, is				CO1	
	a. subtractive constant	b. multiplying constant	c. dividing constant	d. indicative constant.		(1)
26.	While viewing through a level telescope and moving the eye slightly, a relative movement occurs between the image of the levelling staff and the cross hairs. The instrument is				CO2	
	a. correctly focussed	b. said to have parallax	c. free from parallax.	d. not correctly focussed		(1)
27.	The most reliable method of plotting a theodolite traverse, is				CO3	
	a. by consecutive co-ordinates of each station	b. by independent co-ordinates of each station	c. by plotting included angles and scaling off each traverse leg	d. by the tangent method of plotting.		(1)
28.	For the construction of highway (or railway)				CO3	
	a. cross sections are required	b. longitudinal sections are required	c. none of these.	d. both longitudinal and cross sections are required		(1)
29.	For a closed traverse the omitted measurements may be calculated				CO1	
	a. bearing of one side only	b. all the above.	c. both length and bearing of one side	d. length of one side only		(1)
30.	Total latitude of a point is positive if it lies				CO2	
	a. east of the reference parallel	b. north of the reference parallel	c. south of the reference parallel	d. west of the reference parallel.		(1)
31.	Surveys which are carried out to depict mountains, rivers, water bodies, wooded areas and other cultural details, are known as				CO1	
	a. city surveys	b. topographical surveys	c. guide map surveys	d. cadastral surveys		(1)
32.	The method of finding out the difference in elevation between two points for eliminating the effect of curvature and refraction, is				CO2	
	a. reciprocal levelling	b. precise levelling	c. differential levelling	d. flying levelling		(1)
33.	The method generally preferred to for contouring an undulating area, is				CO3	
	a. compass surveying.	b. chain surveying	c. plane table surveying	d. tacheometrical surveying		(1)
34.	Two theodolite method of setting out a curve involves				CO3	

	a. linear measurements only	b. angular measurements only	c. both linear and angular measurements	d. none of these		(1)
35.	The curve of varying radius is known as				CO2	
	a. simple curve	b. compound curve	c. reverse curve	d. transition curve		(1)
36.	Sounding in hydrography is defined as				CO2	
	a. Distance travelled by sound waves in a water bodies	b. Depth of the water body at the point of measurement	c. Difference of gauge reading and water level at the time of observations	d. All the above		(1)
37.	The number of horizontal cross wires in a stadia diaphragm is				CO3	
	a. one	b. Two	c. Three	d. Four		(1)
38.	Overturning of vehicles on a curve can be avoided by using				CO2	
	a. compound curve	b. vertical curve	c. reverse curve	d. transition curve		(1)
39.	If in a closed traverse, the sum of the north latitudes is more than the sum of the south latitudes and also the sum of west departures is more than the sum of the east departures, the bearing of the closing line is in the				CO2	
	a. NE quadrant	b. SE quadrant	c. NW quadrant	d. SW quadrant		(1)
40.	Dumpy level is most suitable when				CO3	
	a. the instrument is to be shifted frequently	b. fly levelling is being done over long distance	c. many readings are to be taken from a single setting of the instrument	d. all of the above		(1)

PART B(8 X 5 = 40 MARKS) (ANSWER ANY EIGHT)

41.	Write five differences between HOC and Rise and Fall Method	CO2	(5)															
42.	A series of offsets were taken from a chain line to a curved boundary line at an interval of 5m in the following order: 0, 3.25, 4.10, 6.45, 8.90, 5.75, 8.50, Calculate the area between the chain line and the boundary line using trapezoidal rule.	CO3	(5)															
43.	Brief out the temporary adjustment done in leveling instrument.	CO1	(5)															
44.	Explain Satellite Station	CO1	(5)															
45.	Explain the purpose of providing Signals in triangulation station. And write different types of signals	CO2	(5)															
46.	Brief about equipments needed for Sounding.	CO1	(5)															
47.	<div>The following records are obtained in a traverse survey, where the length and bearing of the last line were not recorded:<table><tr><td>LINE</td><td>LENGTH (m)</td><td>BEARING</td></tr><tr><td>AB</td><td>75.50</td><td>30° 24'</td></tr><tr><td>BC</td><td>180.50</td><td>110°36'</td></tr><tr><td>CD</td><td>60.25</td><td>210°30'</td></tr><tr><td>DA</td><td>?</td><td>?</td></tr></table>Compute the length and bearing of the line DA.</div>	LINE	LENGTH (m)	BEARING	AB	75.50	30° 24'	BC	180.50	110°36'	CD	60.25	210°30'	DA	?	?	CO3	(5)
LINE	LENGTH (m)	BEARING																
AB	75.50	30° 24'																
BC	180.50	110°36'																
CD	60.25	210°30'																
DA	?	?																
48.	Name and Explain various components of Simple curve with neat sketch	CO1	(5)															
49.	Brief about contouring. Write the uses of contour map?	CO2	(5)															
50.	Explain different types of simple Curves.	CO2	(5)															
PART C(2 X 10 = 20 MARKS) (ANSWER ANY TWO)																		

51.	<p>The following consecutive readings were taken with a level and a 4 -meter leveling staff on continuously sloping ground at common interval of 30m:</p> <p>0.855(onA), 1.545m, 2.335, 3.115, 3.825, 0.455, 1.380, 2.055, 2.855, 3.455, 0.585, 1.015, 1.850, 2.755, 3.845(on B)</p> <p>The RL of A was 380.500m. Make entries in a level book and apply the usual Checks. Determine the gradient of AB by using Height of Instrument (HOI) method.</p>	CO3	(10)																				
52.	<p>Following observations were recorded with a tacheometer fitted with an anallatical lens (K=100; C=0). Calculate the reduced levels of change point and of station T. the staff was held vertical during the observations and the reduced level of B.M was 500 m.</p> <table><tr><th>Instrument station</th><th>H.I(m)</th><th>Staff station</th><th>Vertical angle</th><th>Staff Readings(m)</th></tr><tr><td>O</td><td>1.5</td><td>B.M</td><td>- 4° 30'</td><td>1.25, 1.4, 1.55</td></tr><tr><td>O</td><td>1.5</td><td>C.P</td><td>6° 12'</td><td>1.55,1.75, 1.95</td></tr><tr><td>T</td><td>1.35</td><td>C.P</td><td>- 7° 45'</td><td>1.39, 1.55, 1.71</td></tr></table>	Instrument station	H.I(m)	Staff station	Vertical angle	Staff Readings(m)	O	1.5	B.M	- 4° 30'	1.25, 1.4, 1.55	O	1.5	C.P	6° 12'	1.55,1.75, 1.95	T	1.35	C.P	- 7° 45'	1.39, 1.55, 1.71	CO3	(10)
Instrument station	H.I(m)	Staff station	Vertical angle	Staff Readings(m)																			
O	1.5	B.M	- 4° 30'	1.25, 1.4, 1.55																			
O	1.5	C.P	6° 12'	1.55,1.75, 1.95																			
T	1.35	C.P	- 7° 45'	1.39, 1.55, 1.71																			
53.	Explain Different methods of locating sounding	CO2	(10)																				

ALL THE BEST