Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2024

MINING ENGINEERING
V Semester
MI5504 - Mine Surveying
(Regulation2019)

Time: 3hrs Max. Marks: 100

CO1	The students will have knowledge on methods of underground traversing.
CO2	The students will learn about alignment of survey and tachometry surveying.
CO3	The students will have knowledge about methods of stope and subsidence surveys. They will have a confident about preparation of mine plans and section.
CO4	The students will understand the methods of contouring and curve setting.
CO5	The students will have knowledge on EDM, GPS, DTM, Total station, etc.

BL – Bloom's Taxonomy Levels
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A (10x2=20Marks)
(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	Differentiate plane surveying and geodetic surveying.	2	1	1
2	What is correlation surveying?	2	1	2
3	How to fix central line of shaft being sunk?	2	2	1
4	State the principle of tacheometer surveying?	2	2	2
5	What are the different types of stope surveying?	2	3	1
6	List out the method of scales.	2	3	2
7	Define Contour line in surveying.	2	4	1
8	How to quantify the reservoir water level?	2	4	1
9	State the principle of GPS.	2	5	2
10	Differentiate laser scanning and total station.	2	5	2

PART- B (5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q. No.	Questions	Marks	CO	BL
11 (a)	Discuss in detail the different methods of correlation surveying in adit, incline and shaft.	13	1	3
	OR			
11 (b)	Explain in detail the special features of Mine Surveying.	13	1	3
12 (a)	Under noted are the details of traverse. Find the all coordinate.	13	2	3

Angle	Observed Angle	Line	Measured Distance in m
PQ1	85° 00' 22"	Q1	103.760
Q12	180° 34' 42"	12	89.260
123	46° 00' 32"	23	23.760
234	67° 00' 22"	34	143.950
345	168° 00' 22"	45	25.665
45P	218° 00' 22"	5P	83.765

OR

12 (b)	The following notes refer to a traverse run by a tacheometer fitted with an analectic lens, with constant 100 and staff held vertical. Find the length and bearing of SP.	**13**	2	3

Line	Bearing	Vertical Angle	Staff Intercept
PQ	30° 24′	+ 5o 06′	1.875
QR	300° 48′	+ 3o 48′	1.235
RS	226° 12′	− 2o 36′	1.465

13 (a)	Explain in detail the duties and responsibilities of mine surveyor as per legislation	**13**	3	4
	OR			
13 (b)	Discuss in detail the precaution and statute related to mine surveyor when approaching abandoned mine having water bearing strata in underground working.	**13**	3	4
14 (a)	Explain in detail any one method of horizontal curve setting with neat sketch and nomenclatures.	**13**	4	3
	OR			
14 (b)	Discuss in detail making of contour line and state the application and uses of contour and its characteristics.	**13**	4	3
15 (a)	Write a short note on following: i. Electronic Distance Measurement Method. ii. Electronic Tacheometer.	**6** **7**	5	4
	OR			
15 (b)	Write a short note on following: i. Ground Penetrating Radar. ii. Laser Scanning	**6** **7**	5	4

PART- C (1x 15=15Marks)

(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	Three bore holes A, B and C are put down in a virgin area to prove a coal seam. B lies 270m to the north of A and C lies 325m east of A. The bore hole A proved the seam at 118m, B at 185m and C at 155m. Find the calculation and by plotting the direction and amount of full dip.	**15**	1,2,4	5