

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP2023)**

**CLASS: BTECH
BRANCH: CIVIL**

**SEMESTER : VI
SESSION : SP2023**

SUBJECT: CE426 APPLICATION OF CE TO MINING

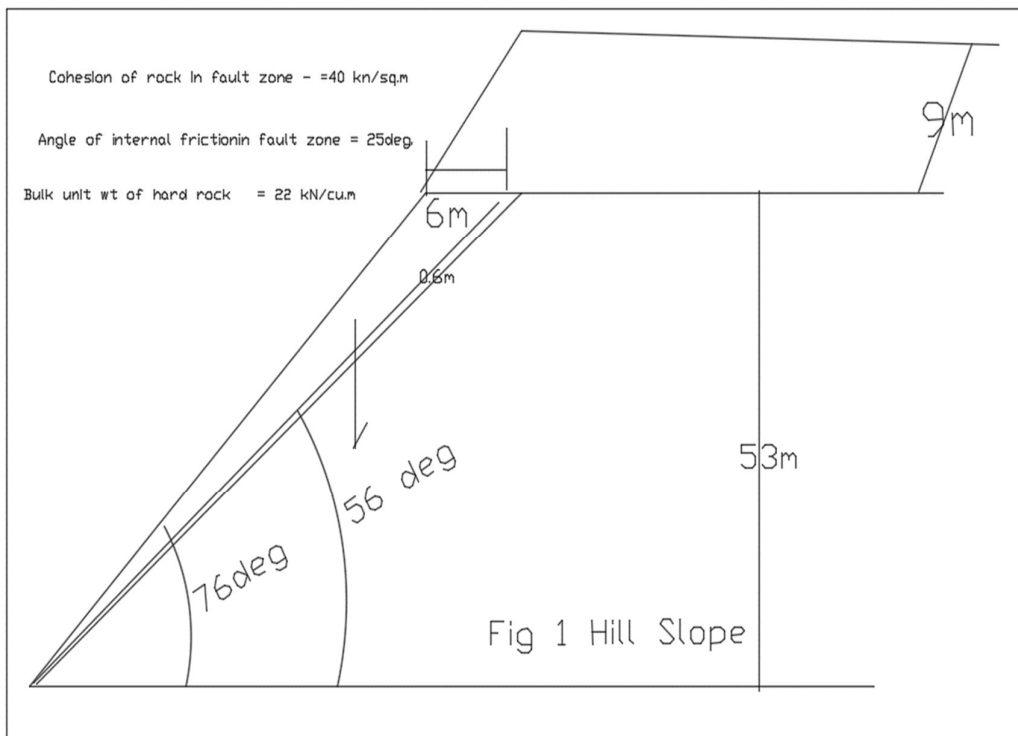
TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates

		CO	BL
Q1 (a)	Discuss in brief RQD and its relation on rock properties	[2]	1 1
Q1 (b)	Discuss rock mechanics and different failure modes of rock slope	[3]	1 1
Q2 (a)	Define Rock Mechanics and its application in Civil and Mining	[2]	3 3
Q2 (b)	Discuss in brief the grouting in rock mass.	[3]	3 3
Q3 (a)	Determine Destabilizing force in potential block (without seismicity)	[3]	2 2
Q3 (b)	Determine cohesive force actg on above potential block (fig 1)	[2]	2 2



Q4 (a)	Determine frictional force and FS of the failure plane without seismicity	[3]	2 2
Q4 (b)	Determine Disturbing force in case of Seismicity (seismicity factor = 0.1)	[2]	2 2
Q5 (a)	Determine Factor of Safety of failure block in case of seismicity	[3]	2 2
Q5 (b)	Determine Factor of safety of failure block considering both seismicity and seepage force.	[2]	2 2