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

CLASS: B.TECH   SEMESTER: VIIth
BRANCH: CIVIL   SESSION: MO/2022

SUBJECT: CE426 APPLICATION OF CE TO MINING
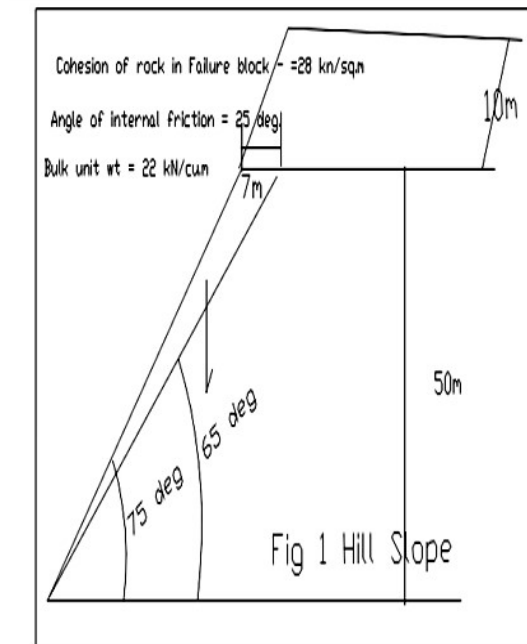
TIME: 2 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

				CO	BL
Q1	(a)	Discuss in brief RQD and its relation on rock properties	[2]	1	1
Q1	(b)	Discuss different failure modes in rock slope.	[3]	1	1
Q2	(a)	Discuss advantages of opencast mining	[2]	3	3
Q2	(b)	Discuss disadvantages of opencast mining.	[3]	3	3
Q3	(a)	Determine Weight of potential failure block in the hill slope (Fig 1)	[2]	2	2

(A fault plane is intersecting the toe of the hill to form potential failure block)

Fig 1 Hill Slope

Cohesion of rock in Failure block =28 kn/sq.m
Angle of internal friction = 25 deg
Bulk unit wt = 22 kN/cu.m
10m
7m
50m
75 deg
65 deg

Q3	(b)	Determine Destabilizing force in above potential block	[3]	2	2
Q4	(a)	Determine frictional force in the failure plane (Fig 1)	[2]	2	2
Q4	(b)	Determine Cohesive force in the failure plane	[3]	2	2
Q5	(a)	Determine Factor of Safety of failure block (Fig 1)	[2]	2	2
Q5	(b)	Discuss in brief the grouting in rock mass.	[3]	2	2

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