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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR/MAY 2025

MINING ENGINEERING

Seventh Semester

MI 5701 – MINE LEGISLATION AND SAFETY

(Regulation 2019)

Time: 3 hrs

Max. Marks: 100

- CO1 To provide an insight to various laws, rules and Acts related to Mines Safety and mining legislation applicable to the mineral industry.
- CO2 To learn the procedures to obtain necessary permission from the regulatory agencies for opening, operation and closure of mines in respect of mine safety.
- CO3 To analyze the accidents and prepare the accident enquiry reports.
- CO4 To understand the significance of mine diseases affecting the health of persons working in the mine.
- CO5 To carry out the risk assessment, safety audit process and prepare the safety management plan for the mines.

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Appling, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)

(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1	Define 'Bye-Law' as per Mines Act 1952.	2	CO1	L1
2	Name any four regulatory bodies applicable to the mining industry.	2	CO1	L1
3	Define "Average daily employment".	2	CO2	L1
4	What do you understand about 'Code of Practice' in relation to mining machinery?	2	CO2	L2
5	Define 'Abandonment of Mine' as per MCDR 1988	2	CO3	L3
6	Write a short note on 'Approved Mining Plan'.	2	CO3	L3
7	Write a short note on EMP.	2	CO4	L4
8	Mention any four notified diseases under per the Mines Act?	2	CO4	L5
9	What is a Group V.T Centre?	2	CO5	L6
10	Explain severity index in mine accidents.	2	CO5	L5

PART- B(5x 13=65Marks)

Q.No	Questions	Marks	CO	BL
11 (a)	What are the duties and responsibilities of Mines Manager?	13	CO1	L1
OR				
11 (b)	What is a 'Misfire' in blasting? How to deal with misfire statutorily?	13	CO1	L1

12 (a) State the procedures to obtain and to execute the Mining lease from the State Government in case of Minor Minerals. 13 CO2 L2

OR

12 (b) What are the salient points shown in Water Danger Plan and section as per CMR 2017. 13 CO2 L2

13 (a) Write a note on '**Public Hearing**' process as stipulated in EIA Notification 2006. What are the merits and demerits of the Public Hearing Process? 13 CO3 L3

OR

13 (b) Who is a Welfare officer in a mine? State his qualifications for appointment as per the statue. Mention the duties and responsibilities of the Welfare Officer. 13 CO3 L3

14 (a) What could be the occupational health problems with increasing mechanization in an opencast coal mine? 13 CO4

OR

14 (b) A large open cast coal mine producing 10 MT of coal per year with the stripping ratio of 1:4 where the incidence of haul-truck accidents results in fatal accidents is increasing. Enumerate the reasons for the high incidence of haul-truck accidents causing fatal accidents. What actions would you take to fulfill production targets with due regard to safety. Draw a detailed plan of action for the same. 13 CO4 L4

15 (a) What are the objectives of Safety Audit and benefits of the Safety audit process? 13 CO5 L4

OR

15 (b) (i) Write a note on Risk Assessment and Risk Management Approach. 7
(ii) Explain the difference between an Unsafe condition, Accident and Disaster in a mine giving an example of each. 6 CO5 L4

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No	Questions	Marks	CO	BL
16.	An opencast coal mine is having the production capacity of 5 MT/year with the stripping ratio of 1:4 but the mine is situated at 700 m away from nearby village surrounded by the agricultural farms. A flyrock travelled from the bench blast in the overburden strata resulting in death of a village man. In the capacity of the Mine Manager, write an enquiry report of the accident bringing out contraventions, responsibilities, and suggestions to prevent similar accident in future. Assume your own conditions wherever applicable.	15	CO3	L6

