

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course Name : Mine Legislation & Safety

Programme Name : B.Tech Mining Engineering

Course Code : MIEG 423

Semester : VIII

Time : 03 hrs

Max. Marks : 100

Instructions: Draw suitable sketches wherever necessary

SECTION A

All questions are compulsory

S. No.		Marks	CO
Q 1	<p>i. Discuss the prescribed fee & postal order for blaster examination</p> <p>ii. What is the periodical medical examination scheme for overman, sirdar & foreman</p> <p>iii. Discuss the amendment related to employment of manager in metalliferous mine</p> <p>iv. Describe the fitness standard in O/C mine</p> <p>v. Categorize the injuries which lead to 100% loss of earning capability.</p> <p>vi. Discuss the standard procedure to check the durability of flame safety lamp</p> <p>vii. Justify the use of asbestos gasket in flame safety lamp</p> <p>viii. Specify the dimension of shelter as per CMR</p> <p>ix. With neat sketch, differentiate between incline & abandoned incline</p> <p>x. Discuss the active immunization standards for injury/ injured miner</p>	02*10 =20	CO4+ CO1

SECTION B

All questions are compulsory

Q 2	The terminology "Size of overman's district" is used everywhere in U/G operation. Support/ Oppose the same with suitable argument.	10	CO3
Q 3	For a U/G Coal mine, examination was held. After examination certificates were verified. Out of total selected candidates, for 5 candidates, the certificates are found to be fraudulent. Considering yourself as the chairman of board, suggest the necessary action to be taken.	10	CO2
Q 4	<p>i. Colour code of explosive for second shift is -----</p> <p>ii. Fuel in GL-5 is -----</p> <p>iii. INMOSSA stands for -----</p>	10	CO1

	<p>iv. Illumination standard in first aid room should be -----</p> <p>v. Silica percentage in incombustible dust should be -----</p> <p>vi. No tree/ debris is allowed within -----mtrs from sides of excavation</p> <p>vi. Ballast size in haulage track is -----</p> <p>vii. Life span of treated timber is -----</p> <p>viii. Over the diameter of explosive cartridge, drilling clearance should be -----mtrs.</p> <p>ix. For overman's district, steepness of working should be -----.</p> <p>x. Number of persons in a rescue brigade should be -----.</p>		
Q 5	<p>A reputed supplier has given quotation for two varieties of cap lamp.</p> <ol style="list-style-type: none"> 1. Lead acid battery cap lamp 2. Alkaline battery cap lamp. <p>Comparing the both, which one will you suggest being the agent of the mine?</p> <p style="text-align: center;">OR</p> <p>Describe the two-tier application scheme of flame safety lamps. Specify the role of the existing models in this two-tier scheme.</p>	10	CO4
<p>SECTION C</p> <p>All questions are compulsory</p>			
Q 6	<p>List down the occupational diseases as per Mines Act, 1952 in decreasing order of occurrence, highlighting the cause of the disease.</p> <p>Assuming yourself the agent of a mine where good chunk of miners is diagnosed with occupational disease, state the standard code of practice for the same</p>	08+12 =20	CO6
Q 7	<p>Draw a U/G mine layout (bord & pillar district/s), demarcate the following features and label them as per CMR. Labeling should be done with proper color code as well.</p> <ul style="list-style-type: none"> • Shaft • Pillars & galleries • Dip & strike of deposit • Doors & air current • Brick/ concrete ventilation • Stopping & explosion proof stopping <p style="text-align: center;">OR</p> <p>In a U/G mine working, blasting is supposed to takes place in the second shift. During shift change, the Mine Manager needs to ensure safety measures before blasting. It is advised to check the Shot-firer & his helpers. Being a Mining Engineer, suggest what the Manager needs to do in such circumstance with valid reasons</p>	08+12	CO5
		20	

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SECTION A
All questions are compulsory

S. No.		Marks	CO
Q 1	i. Describe the 3-tier first-aid rule	05	CO1
Q 2	Discuss the provision for overtime in Mines Act, 1951	05	CO1
Q 3	What do you mean by vision standard in U/G mine	05	CO1
Q 4	Outline the new amendment for female workers in CMR-1957.	05	CO1

SECTION B
All questions are compulsory

Q 5	There are four miners (coal & metal both) who are going to appear for certification course in sot-firing. Out of 4, three were working as shot-firers before 9months & the fourth one is newly joined. Suggest the standard practice for the same as per Vocational training Rule, 1986	10	CO3
Q 6	Ventilation & safety officer are two separate entities in mining operation Or Both can be same? Evaluate the job responsibility in terms of production of mine & give suitable conclusion	10	CO2
Q 7	i. Outline the specifications for canteen committee ii. Explain the provision for conservancy in Mines Act iii. Analyze the need of electricity rule in Mine iv. Examine the necessity of Workman Inspector in mine v. What is the meaning of special category employees in Vocational Training Rule, 1986?	10	CO4
Q 8	Apart from educational qualifications, judge the role of mine production in deciding the statutory positions in Mine.	10	CO3

SECTION C
All questions are compulsory

Q 9	Summarize the basic amenities need to be provided to miners in accordance with	08+12	CO6
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	CMR, MMR & Mines Act	=20	
Q 10	<p>In a U/G metal Mine, regular & periodical inspection is needed. The officials who are responsible for such inspection have set of job responsibilities. Evaluate the job responsibility of each of them and select the most responsible one in case of any eventuality.</p> <p style="text-align: center;">OR</p> <p>Summarize ISO 19434:2017, classification scheme of mining accidents, highlighting the key parameter.</p>	<p>08+12</p> <p>20</p>	CO5