Name:

**Enrolment No:** 



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

## Online End Semester Examination, May- 2021

Course Name: Mine Legislation & safety

Programme Name: B. Tech, Mining

Course Code: PEMI 4004

Max Marks: 10

## Course Code: PEMI 4004 Max. Marks: 100 **SECTION A (30 Marks)** Air quantity checking for mechanical ventilators in gassiness type-II mines will be Q 1 once in ----- days In Non-sealed off areas, air supply should be ----ii. CO<sub>2</sub> 05 iii. Mines Creche rules are administrated by --iv. Penalties & Procedures come under ----v. Incombustible dust testing should be done once in -----months Q 2 i. The date of annual return in mine is -----Methane monitors are placed at an interval of ------along main pipeline ii. iii. O/b height in alluvium shouldn't be greater than ------05 CO<sub>2</sub> Toe of spoil bank shouldn't get extended to any point within -----mtrs of mine iv. opening Minimum age of trainee as per Mines Rule should be -----yrs Q 3 Soundlevel of Audio Visual Alarm (AVA) should be at least higher than the a mbient noise level. ii. Fire extinguisher used to treat electrical fires is ----As per Reg.177 of MMR 1961 Every Fence erected on the surface shall once at least in iii. 05 **CO1** every week be examined by ---Flash back arrestor" should be provided for\_ iv. Manholes are found in --- haulage v. i. O 4 Minimum height of shelter is > ---- mtrs ii. The reporting authority for cancellation & suspension of certificates is ---iii. For appointment of mechanical engineer, aggregate power of all machines > ----05 **CO1** Post shot-firing, area within a distance of --- mtrs from face needs to be cleaned iv. Incombustible dust should contain ----% of silica v. Q 5 i. O/b height in alluvium shouldn't be greater than ----ii. Maximum number of persons working in overman's district should be less than – **CO3** iii. Life span of treated timber used in rail sleeper is -----yrs (max) 05 iv. Stepness of working in overman's district will be -----v. Notice of occupational disease needs to be given in form ----For Degree-I, In the intake side of brattice, at a distance of 4.5 mtrs, air velocity is ----i. Q6 -mtrs/min ii. Training officer for vocational training must has ---- yrs of experience **CO3** 05 iii. Rescue brigade consists on -----people iv. In ideal condition, the practical experience meant for mining mate is ----- years Runaway ramps can be seen at ----v.

	SCETION B (10*5=50 Marks)		
Q 7	Standards of ventilation & Standing order in ventilation are Same or different. Support your answer with suitable justifications	10	CO3
Q 8	In a U/G mine working, blasting is going to take place in the second shift. Being the Manger of mine, appraise  1. Statutory provisions for shot-firer & helper with valid reasons  2. Special precautions in stone drifts	10	CO4
Q 9	Discuss the factor/s governing appointment of Manager and/or Asst. Manager in Metal Mine. Highlight the implication/s of the same.	10	CO1
Q 10	In an opencast Coal Mine, daily production is 800 cubic mtrs.  Number of production days in a month: 26  Considering yourself as Agent of Mine, examine the requirement of any statutory position and suggest.  Assume the same condition for Metal Mine and suggest if the owner needs to go for appointment of any statutory position/s	10	CO4
Q 11	Discuss the essential requirements for approval of Mine Plan in dimension stone Quarry  OR  i. Explain quarterly & annual return provisions in OMR, 1986. ii. Define special category employees in Vocational Training Rule, 1986.	10	CO2
	SECTION C (20 Marks)		
Q 12	For an underground coal mine, Coal is interbedded with Shale. The entire coal seam is highly fractured. Structurally, the seam traversed by multiple dykes. Final depth of coal seam is 600 mtrs. Water table occurs at a depth of 450 mtrs.  Nature of coal: Highly susceptible to self -heating.  Degree of gassiness: Type II  Considering the given conditions, prepare the mine Layout with proper demarcations and suitable justification	20	CO4
	OR		CO4
	There are 02 levels in a U/G coal mine. The mine is of gassiness type I and work is in progress in Level-2. In Level-1, illumination standard is as per norm. In Level-2, lighting is a problem in most of the parts. Being the Asst. Manager of the mine, investigate the situation and  i. Identify the issue in lighting	10+10 =20	
	ii. Select the most suitable method of lighting		