Name:

Enrolment No:



Semester: VI

Time: 03 hrs

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, July- 2020

Course Name: Mine Environmental Engg. Programme Name: B. Tech, Mining Engineering

urse Code: PEMI 3003 Max. Marks						
SECTION A (60 Marks)						
	Marks	CO				
TheAct explicitly prohibits discharges of environmental pollutions in excess.	10	CO2				
The Plume concentration at the ground level is the concentration at discharge point.						
The main factor of plume dispersion is						
The main pollutant in Air quality is						
Green belt development can reduce/ control the sound level at						
An increase in dissolved solids in water,the conductivity of the water.						
The most common problem created by tailings are for						
Ground Vibration is independent of						
Scaled distance is related to						
The main purpose of using Deck Charging is						
For fine grained rock/soil, consolidation will be high and the area will be	10	CO1				
For tailings, drained shear strength isthe undrained shear strength.						
EIA should be done for Category type projects.						
The boundary for deciding Category A or B of Mining Lease Area is at						
The Validity of ToR in Environmental Clearance is						
The main component of an EMP is						
The Windrose diagram is useful to denote in different directions.						
Main purpose to conduct the Secondary blasting is to reduce						
Progressive Mine Closure Plan has to be submitted within from the date of notofication						
The most environmental damage of blasting in surface mines is						
	10	004				
Mark as True/ Flase	10	CO2				
	SECTION A (60 Marks) TheAct explicitly prohibits discharges of environmental pollutions in excess. The Plume concentration at the ground level is the concentration at discharge point. The main factor of plume dispersion is The main pollutant in Air quality is Green belt development can reduce/ control the sound level at An increase in dissolved solids in water,	SECTION A (60 Marks) Marks TheAct explicitly prohibits discharges of environmental pollutions in excess. The Plume concentration at the ground level is the concentration at discharge point. The main factor of plume dispersion is The main pollutant in Air quality is Green belt development can reduce/ control the sound level at An increase in dissolved solids in water,the conductivity of the water. The most common problem created by tailings are for Ground Vibration is independent of Scaled distance is related to The main purpose of using Deck Charging is For fine grained rock/soil, consolidation will be high and the area will be For tailings, drained shear strength is				

	Adiabatic lapse rate is independent of pressure.		
	Downwash of plume and eddies/wake formation are same phenomenon.		
	The Air quality standards are weighted in daily, monthly and annual basis.		
	The Sound Pressure Level is the intensity of sound and measured in dB (A).		
	Attenuation relates to decrease in intensity fo sound with distance.		
	The Noise Level in India for residential area in day/night is 75/65 dB(A), respectively.		
	The most important factor for water pollution is Acid Mine Drainage.		
	BOD is always greater than COD.		
	Water Retention Dams are founded in rock/ grouting, not like Tailing Dams.		
	Void ratio of tailings is greater than porosity of tailings.		
Q 4	Mark as True/ False		
	Resonance generates when structure's natural frequency is mixed with ground vibration frequency.		
	PPV limits by DGMS is provided within Dominant Exciting Frequency range 20-20000 Hz.		
	For B2 Category of Mining Lease area, no environmental clearance is needed.		
	There has to be recorded/reported Pubic Involvement when applying for the Environmental Clearance.		
	Only main office construction is allowed before getting Environmental Clearance.	10	CO4
	EMP is an essential part of EIA.		
	Windrose diagram is has a total of 16 directional divisions.		
	Progressive Closure Plan has to be reviewed every 3 years of mining.		
	Smaller wavelength vibration is susceptible to create less damage than greater wavelength vil		
	Final Closure Plan must be approved before 9 months from the proposed closure of mine.		
Q 5	Match the following column i. Environmental Regulations Component		
	a) Water Prevention and Control of Pollution Act Economic incentives and resources		
	b) Water Cess Act Mine Effluent Standards		
	c) Environment Protection Act d) Wild Life protection Act Protection and Improvement		
	ii. Behaviour of Smoke Plumes Meaning	10	CO2
	a) Fanning Plumes go upward due to stable inversion near groundb) Fumigation Intense heat form large convective eddies which break		
	plumes		
	c) Looping Convective eddies form and bring back heavy effluents to ground		
	d) Lofting Inversion exists and plumes rises hgh and then level off		
	iii. Pollutant or Source Example		

	a) Primary pollutants Smog, Ground level ozone		
	b) Secondary pollutants CO, CO2, NOx, SOx		
	c) Mobile sources Chimneys from Coal Handling Plants, Crusher		
	d) Stationary sources Dumper, Excavators, cars		
	iv. Tailings terms Meaning		
	a) Tailing Dam Structure built to store tailings		
	b) Tailing Pond Area kept for settling/storing the water		
	c) Tailing Impoundment The storage space created by the tailing dam to deposit tailing		
	d) Tailing Management facility The total set of structures with dam, pond, pipes and pumps		
	v. Tailing or Water Dam		
	construction method Characteristics		
	e) Upstream Highest fill volume, toe moves outwards with each raise		
	f) Downstream Lowest fill volume, lowest rate of raise		
	the dam		
	g) Centreline Average fill volume, Rate of raise is the		
	highest Water Retenion Dam Height is fixed and built for high pressure support for long time		
Q6	i. Fixed cost remains same throughout the entire operation cycle		
	ii. Inner curves of meanders are suitable locations for placer deposition		
	iii. Radon acts as a path finder for Uranium	06	004
	iv. Identification of anamlous area is done in tactical survey	06	CO4
	v. RADAR is used where shape, size of deposit matters over depth		
	vi. Error in estimating the Probable reserve is 30-50%		
	SECTION B (40 Marks)		
Q 7	Classify the Blasting Damages in Mines as per DGMS.	06	CO1
Q 8	Describe the various factors for Plume Dispersion	06	CO1
Q 9	Identify the factors that govern generation of Air Blast in surface mines.	08	CO2
Q 10	Differentiate the Upstream Tailing Dam and Water Retention Dam Construction methods.	06	CO3
Q 11	Prepare a report on Environmental Management Plan of an Opencast Metal Mine.	14	CO4