

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course Name: Mineral Economics & Exploitation Risk

Semester : IV

Programme Name: B.Tech Mining Engg

Time : 03 hrs

Course Code : PEMI 2006

Max. Marks : 100

Instructions: Draw suitable sketches wherever necessary

SECTION A

All questions are compulsory

S. No.		Marks	CO
Q 1	Explain Time- Value of money	05	CO3
Q 2	Describe straight line depreciation	05	CO3
Q 3	Differentiate between contiguous & exclusive economic zone	05	CO3
Q 4	Examine the economic relevance of sunk cost in present decision-making process	05	CO3

SECTION B

All questions are compulsory

Q 5	<p>There is a Pb deposit which is evaluated based upon 7 boreholes. Find out the average grade of the deposit. The details are as follows</p> <table border="1"><thead><tr><th>Sample location</th><th>Thickness</th><th>Area</th><th>Tonnage Factor</th><th>grade</th></tr></thead><tbody><tr><td>B-1</td><td>150</td><td>5320</td><td>10</td><td>1.21</td></tr><tr><td>B-2</td><td>135</td><td>5300</td><td>10</td><td>0.97</td></tr><tr><td>B-3</td><td>?</td><td>4400</td><td>10</td><td>?</td></tr><tr><td>B-4</td><td>175</td><td>5520</td><td>10</td><td>0.75</td></tr><tr><td>B-5</td><td>155</td><td>6800</td><td>10</td><td>0.82</td></tr><tr><td>B-6</td><td>180</td><td>4960</td><td>10</td><td>0.66</td></tr><tr><td>B-7</td><td>?</td><td>4520</td><td>10</td><td>?</td></tr></tbody></table> <p>The max. depth up to which, deposit is encountered is 300. The information for Borehole 7 is as follows.</p> <p>Each section is at an interval of 50. The respective grade for each section is 0.4, 0.9, 1.2, 1, 1.7 & 1.1 of Pb.</p> <p>For Bore hole 3, the information is as follows-</p>	Sample location	Thickness	Area	Tonnage Factor	grade	B-1	150	5320	10	1.21	B-2	135	5300	10	0.97	B-3	?	4400	10	?	B-4	175	5520	10	0.75	B-5	155	6800	10	0.82	B-6	180	4960	10	0.66	B-7	?	4520	10	?	10	CO2
Sample location	Thickness	Area	Tonnage Factor	grade																																							
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Thickness	Grade
0-50	0.3
50-100	0.7
100-150	0.5
150-180	1
180-250	0.7
250-300	0.8

All units (Length) are in Feet & cut-off grade is 0.7% of Pb

Q 6	Explain assay in context of mining operation? Deduce the formula of assay for vein type of deposit with suitable reason for choosing the calculation method	10	CO1
Q 7	<p>JSWL has prepared a cost sheet for its Coal Mine & circulate the cost per ton of ore. If the mine has sold ore at a rate of 140/- per ton, compute the profit of mine during the year. The cost sheet is as follows—</p> <p>Opening Stock: 10000tons Closing Stock: 3000 tons Dispatched during the year: 40,000 tons</p> <p>Cost Sheet</p> <ol style="list-style-type: none"> 1. Salaries & wages: 15,00,000 2. Power consumption: 5,00,000 3. Repair & maintenance: 8,00,000 4. Store: 2,00,000 5. Explosives: 5,00,000 6. Depreciation: 4,00,000 7. Royalty: Rs 20/- per ton 	10	CO3
Q 8	<p>Evaluate the suitability of DCF techniques in appraising mining projects</p> <p style="text-align: center;">OR</p> <p>Balance sheet of a mining company is quite messy. The balance sheet has certain data which are needing to be put in appropriate headings. Assuming yourself as the newly appointed CA, categories the data into suitably. The data are-----</p> <ol style="list-style-type: none"> a. Bills payable b. Debtors & creditor c. Tax d. Long term securities e. Patents f. Land g. Share capital h. Building i. Prepaid expenses j. Inventory 	10	CO4

	While categorizing the data, support your decision with strong arguments.		
SECTION C			
All questions are compulsory			
Q 9	<p>A leading explosive manufacturing company requires 20,000 corrugated boxes annually for packing explosive. Cost of placing an order is Rs 100/- & inventory carrying cost is 20%. Price per box is Rs. 10/-. The supplier offers 1% discount, if 4000 boxes are purchased & 3% if 10000 boxes/ more are purchased. Find out</p> <p>a. What would be the ordering quantity?</p> <p>b. If you are the financial advisor to the company, would you suggest accepting the discount? If yes/ no, state suitable reason for the same.</p>	20	CO6
Q 10	<p>Justify the use of NPV in determining project viability. With given set of information, forecast the profitability of project.</p> <p>ABC crusher company has invested 2, 25,000. Company has inflow of 48,000, 67000, 95000 & 1,10000 for 4 years at a discount rate of 15%. Calculate NPV of the project & predict the viability of project.</p> <p style="text-align: center;">OR</p> <p>For a given mine, the selling price of finished product is $100n (n^2 - 13n + 52)$, where n is the number of units produced. If the variable cost per unit is Rs. 200/ & fixed cost is Rs.5600/-then calculate the break-even number in production & maximum profit.</p>	20	CO5