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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV/DEC- 2024

**MINING ENGINEERING**

**VII Semester**

**MI 5008 - SMALL SCALE MINING AND MARINE MINING**

(Regulation 2019)

Max.Marks: 100

Time:3hrs

CO1	The students will have basic knowledge on small scale mining.
CO2	The students will have adequate knowledge on methods of small scale mining.
CO3	The students will have basic knowledge on marine mining.
CO4	The students will get knowledge about physical and chemical properties of sea water.
CO5	The students will understand about exploitation of marine deposits, machineries used, etc.

**BL – Bloom's Taxonomy Levels**

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

**PART- A ( 10x2=20 Marks)**

(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1.	Specify any four major advantages and disadvantages of small-scale mining.	2	1	L1
2.	Enumerate the major issues being faced in Indian granite quarrying operation.	2	1	L2
3.	How do you distinguish 'Small scale mining' from 'Large scale mining'?	2	2	L2
4.	Spell out any four significant problems being faced in Indian granite quarrying operation.	2	2	L2
5.	Write a short note on placer minerals with examples.	2	3	L1
6.	Write short notes on influence of waves on beach placer mining	2	3	L3
7.	Name the different types of placer deposits	2	4	L2
8.	List a few minerals that can be extracted from sea water.	2	4	L1
9.	How are frozen deposits mined?	2	5	L1
10.	List four mining methods suggested for polymetallic nodule mining.	2	5	L2

**PART- B (5x 13=65Marks)**

Q.No	Questions	Marks	CO	BL
11 (a)	(i) Illustrate the practices, policies, and perspectives of Indian policy in small scale mines with examples.	6	1	L3
	(ii) Statutory provisions under which the small-scale mining operations are exempted.	7	1	L3
<b>OR</b>				
11 (b)	Explain the concept of small-scale mining in detail and describe the different problems of small scale mines with examples and possible mitigation measures.	13	1	L3
12 (a)	Define 'Delineation' and explain the various methods of delineation in small scale mining in detail with neat sketches.	13	2	L4
<b>OR</b>				
12 (b)	Write a short note on (a) Granite Processing (b) Marketing scenario of granites in India (c) Recent trends in small scale mining.	13	2	L4
13 (a)	Describe (a) about the future need for ocean mining (b) mining of radical deposits.	13	3	L3
<b>OR</b>				
13 (b)	Draw a sketch of the ocean boundaries, describe the various deposits and the metals that can be mined in the future from them	13	3	L3
14 (a)	Describe about the mineral processing operations done in any beach placer mining plant in India	13	4	L2
<b>OR</b>				
14 (b)	Describe about the origin of (a) Polymetallic Nodules and (b) Polymetallic Sulphides highlighting the metals that can be obtained from them	13	4	L2
15 (a)	Describe in detail about the origin and composition of cobalt rich crust. Analyse one method that has potential for mining those deposits.	13	5	L4
<b>OR</b>				
15 (b)	Explain the working of Bucket Ladder Dredge with a neat sketch. Describe its types, areas of applicability and limitations of its use.	13	5	L4

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

Q.No	Questions	Marks	CO	BL
16. (i)	Describe the various environmental issues concerned with Deep Ocean Mining.	8	5	L6
(ii)	Describe in detail three kinds of sensors and instruments used in Deep Ocean Mining.	7	5	L5

