



INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

Date: . 02. 2014 ( FN/AN); Time: 2 Hours; Full Marks: 60; Deptt.: Mining Engineering  
Number of Students: 69; Mid-spring Semester Examination 2013 -2014

Old batch: [III B. Tech.: {00MI3003 = 01} + {(10MI1= 03) + III B. Tech (DD) (10MI31= 02) + III B. Tech (DD) (10MI32= 03)}] = 9 +  
Current batch: [ III B. Tech. (H) (11MI1= 29)] + [III B. Tech. (DD) (H) { (11MI31= 14) + (11MI32= 13)}] + [(11MI3EP = 02) + 11MI3FP = 02]] = 60

Sub. No. MI 31004; Sub. Name: Economics of Mining Enterprises 3Yr. B. Tech. (H)

- Instructions: [1] Answer ALL questions; [2] MARKS allotted to each question are indicated on RIGHT MARGIN.  
[3] ANSWERS to all QUESTIONS must START FROM A FRESH PAGE and be CONTINUED with ALL its PARTS.  
[4] ANSWERS to the questions must be SUPPLEMENTED BY DIAGRAMS/ SKETCHES, whenever required.  
[5] The paper has 4 QUESTIONS in total

1. The major question apprehended by the 'world's natural resource situation' always is "How long and under what conditions can human life continue with finite stock in situ mineral resources under limited environmental systems?". On the said context, discuss the 8 major issues cited by the Club of Rome in their famous report 'The Limits to Growth'. (15)
2. (a) Give the elements and characteristics of 'organization structure' for mining enterprises. (4)  
(b) Name the various 'staff-functions' required for an underground copper mine producing five million tonnes of copper ore per year and state the functional areas of assignments of each staff manager. (5)  
(c) Compare between 'Flat' and 'Tall' organization structure. Give the advantages and disadvantages of flat organization structure. (6)
3. (a) What are the major functions of a 'mine manager'? What should be his general objective? Discuss in brief the difference between an 'effective mine manager', and an 'efficient mine manager' from the point of view of economics of working. (3)  
(b) In an opencast coal mine, if P is the production of coal in tonnes, Q is the quantity of overburden removal in cubic metre, M is the man-shift, R is the average stripping ratio and 1.4 is the average specific gravity of coal, then give the expression for calculation of overall OMS of the mine, pre-supposing that effort required for producing one cubic metre of coal is equal to the effort required for removal of one cubic metre of overburden. (3)  
(c) Write in a tabulated fashion, the 'types' and 'formulations' of the main 'six' kinds of productivity measurement systems in mining enterprises and comment on each of them in brief, as regards to their suitability of application in mines. (6)
4. Write short notes on (5x3)
  - (a) Mineral reserve base.
  - (b) Mining definition of 'mineral' in 'legal and administrative' parlance.
  - (c) 'Renewable mineral crop' -- explain and provide examples from India.