B.E/ B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2012

MINING ENGINEERING

THIRD SEMESTER – (REGULATION 2008)

ME9213 – BASIC MECHANICAL ENGINEERING FOR MINING

Time : 3 hrs Max Mark : 100

Answer ALL Questions

Part – A (10 * 2 = 20 Marks)

1. Define black body
2. State Kelvin plank statements
3. Differentiate two stroke and four stroke engine
4. Define COP
5. Mention different types of belt drives
6. What are advantages of grear drive?
7. Define Degree of freedom
8. What is the function of follower?
9. What do you mean by inter cooling in multistage air compressor?
10. Differentiate fans and compressor

Part B (5 * 16 = 80 Marks)

11. Explain the following
    (i) SFEE energy equation applied to an open system
    (ii) Machine and structure
    (iii) Different types of kinematic pair and kinematic link
    (iv) Carnot cycle

12. a. Explain different types of free vibration and forced vibration and its significance.

(OR)

b. Classify compressor and with a neat sketch explain working principle of a centrifugal and a reciprocating compressor

13. a. Explain with neat sketch the construction and working of fuel pump

(OR)

b. Explain with neat sketch simple vapour compression refrigeration system

14. a. Classify & explain rope and chain drives. Mention the advantages and disadvantages over each other

(OR)

b. Classify & explain different types of gear trains

15. a. Draw the profile of radial cam and explain the various terms in the profile.

(OR)

b. Explain the following

(i) Quick return mechanisms

(ii) Straight line generators