

Use separate answer script for each half
Answer SIX questions, 1&6 compulsory and any two from each half.
Marks are given at right side of questions.

First half

1. Write short notes on the followings:
 - a) First fall & periodic fall
 - b) Installation chamber
 - c) Energy train
 - d) DERDS

(4+3+3+3)

2. A coal seam of 3.5m thickness is to be worked by longwall caving system. Average length of core of the immediate strata = 14 cm, compressive strength of strongest bed = 921 kg/cm², thickness of strongest bed = 7.2m, value of 'n factor' = 1.0, value of K factor = 0.025, value of K' factor = 3, maximum convergence = 60mm/m. Colliery management has a support system of maximum support resistance of 90 *Tim*. Suggest a suitable extraction height so that the support systems are compatible.

(11)

3.
 - a) What is solidification of powered support?
 - b) Describe the hurdles on operating longwall face in Indian coal mines. Give few suggestions for overcome the same.

(3+3+5)

4.
 - a) Describe the procedure of salvaging of powered support from longwall face,
 - b) How does overburden moves in longwall system of work?

(6+5)

5.
 - a) What is shortwall mining? Why is it not getting popularity in Indian coal mining industry?
 - b) Describe the measures for preparation of salvaging chamber in PSLW face.

(3+3+5)

Second Half

(Q 6 is mandatory and answer any two from the rest)

Write all parts of a question at same place

6. Sketch a suitable B & P layout to show the following -

2+2+3+3+3

 - i) Dip, rise and level face in a heading
 - ii) Location of Tugger haulage in a district
 - iii) Main sump and Intermediate sump
 - iv) Main return and District return
 - v) Position of shelter in a depi flaring district
 - i) State the requirements in a panel of B & P working. 6+5
 - ii) State the statutes in respect of panel system of working.
 - i) How can you prepare a mine for getting ready to take up the challenges of depi Daring? 4+7
 - ii) How will you extract a seam of 5.2m thick which has been developed with a working height of 3 m along seam floor?

9.
 - i) Sketch and describe a SSR for an adverse depillaring panel from where Coal is to be extracted by B & P working
 - ii) What do you understand by goaf line velocity?

10.
 - i) What do you mean by coal face mechanization?
 - ii) State the parameters that are influential for a district where SDL is employed as face loading. Give some judicious comments to improve its performance.