Code No.: 407C2 | MR14

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

IV B.TECH II SEMESTER ADVANCE SUPPLEMENTARY EXAMINATIONS, JUNE-2018

Subject: **Planning of Underground Coal Mining Project**

Branch: **Mining**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1Mark=5 Marks**

1. Why feasibility report is required to start any mining project?
2. What size of galleries are permitted in Indian coal mines?
3. What is the full form of SDL?
4. How many number of face conveyors are provided in the double unit long wall face?
5. What is subsidence profile?

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. Draw neat layouts of conventional and modern long wall faces.
2. What is coal?
3. List various risks in mine planning.
4. List factors influencing choice of coal mining methods.
5. What are the different degrees of gassiness of Indian coal mine? How gas content of a coal seam influences the choice of mining method?
6. What is continuous miner?
7. A double ended ranging drum shearer is employed in a longwall mine of face length 140 m. The extraction height is 3.5 m and depth of the web cut is 0.7m. The cycle time for unidirectional cutting is 40 min. Considering bulk density of coal to be 1.3 t/m^3, determine monthly production from the face in ton, If effective working hour is 5 hours per shift and 25 working days per month (Assume 2 production shifts per day).
8. What are the parameters considered during deployment of SDL and LHD in mines?
9. State commonly used numerical methods used for prediction of subsidence.
10. What are the analytical methods to predict subsidence? Explain any one briefly.

PART-B

Answer ALL questions of the following **5x10 Marks= 50Marks**

1. Discuss in brief the shortterm planning of underground coal mine project.

OR

2. Discuss the main features of shortterm and longterm mine planning.

3. Discuss the different factors in detail which affect the planning of underground coal mine.

OR

4. Discuss in detail on technological options available for coal extraction by underground mining, giving their applicability, advantages and disadvantages.
5. Explain the production operation by BG method with neat sketch.

OR

6. Briefly narrate the growth of Indian coal industry with respect to technological innovation.

7. Explain in detail the sequence of cutting operations by DERD shearer in long wall panel, with suitable diagrams.

OR

8. Explain in detail on the extraction of coal seam by fully mechanized longwall mining equipped with DERD shearer, AFC and Powered supports. Assume relevant data wherever necessary
9. Discuss the empirical method of subsidence prediction.

OR

10. Explain in brief as to how to prevent subsidence over long wall goaf area.

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IV B.TECH II SEMESTER ADVANCE SUPPLEMENTARY EXAMINATIONS, JUNE-2018

Subject: **Mine Health & Safety Engineering**

Branch: **Mining**

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1Mark=5 Marks**

1. How accidents can be classified?
2. FTA stands for?
3. What is refresher training?
4. What is Subsidence?
5. What is gun powder

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. What is the cost of accidents in mines?
2. What is chasnala mines accident?
3. What is ETA?
4. Define the term risk assessment?
5. What are the duties of MVTC?
6. Who gives training in MVTC?
7. Define main fall?
8. Give an account on accidents in opencast mines?
9. What are the causes of Accidents due to explosives?
10. Explain how the electrical accidents can be avoided in Open cast mines?

PART-B

Answer ALL questions of the following **5x10 Marks= 50Marks**

1. What do you understand by the term statistical analysis? Tabulate the statistical analysis of mine accidents in India?

OR

2. Briefly explain what are the safety equipment give to a worker for his safety in underground mine?
3. What are the risk minimizing techniques explain one of the techniques in detail?

OR

4. How you carry Risk analysis using HAZOP?
5. What is the Human Behavioral approach in safety?

OR

6. Write a short note on
   a) Safety management b) safety organization
7. Explain the Major causes of accidents in Open cast mines and what are the precautions to be taken to avoid the same?

OR

8. Explain in detail how the accidents can be avoided due to dumper?
9. What are the causes and measures for prevention of accidents due to electricity?

OR

10. What are the different types of explosives used in underground mines? Tabulate them.

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IV B.TECH II SEMESTER ADVANCE SUPPLEMENTARY EXAMINATIONS, JUNE-2018

Subject: **Mine Ground Control**

Branch: Mining

Time: 3 hours **Max. Marks: 75**

PART – A

I. Answer ALL questions of the following **5x1Mark=5 Marks**

1. Who has duties in relation to the ground control?
2. Which test is conducted for determining the insitu strength of rock.
3. What are different types of wooden supports?
4. Define Stope?
5. What is meant by local fall?

II. Answer ALL questions of the following **10x2Mark=20 Marks**

1. What are the constraints in ground control?
2. What are the ground control practices in Mines?
3. What is meant by cohesion?
4. What is the modern concept of strata pressure redistribution?
5. If RMR of the strata is 60, which type of support system is provided?
6. Write a short note on open and closed circuit of hydraulic supports
7. What are the factors affecting pillar design?
8. Explain about design of open pit slopes.
9. Define Critical subsidence.
10. List out different subsidence measuring techniques.

PART-B

Answer ALL questions of the following **5x10 Marks= 50Marks**

1. Briefly explain the ground control practices used in mines.

OR

2. Define Ground control and how can you control the ground in Mines?
3. Explain briefly the instrumentation used for in-situ stress measurement.

OR

4. Explain the strata pressure redistribution in board and pillar workings with a neat sketch.
5. Discuss the supporting system to be practiced in the event of roof fall at a junction with a sketch.

OR

6. Write a note on a) Roof trusses and b) powered supports
7. Design an underground circular opening in the strata near to fault zone

OR

8. Explain the concept of openpit slope design.
9. Explain graphical method of subsidence prediction.

OR

10. Explain about the measurement of subsidence