

# GBCS SCHEME

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18MN44

## Fourth Semester B.E. Degree Examination, Jan./Feb. 2021 Mining Machinery

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. With a neat labeled sketch explain construction of different types of wire ropes. (10 Marks)  
b. Explain the following process with the help of a neat sketch:  
i) Capping process of ropes.  
ii) Recapping process of ropes.  
iii) Splicing process of ropes. (10 Marks)

OR

- 2 a. With as neat sketch explain endless rope haulage with its limitations, application, merits and demerits. (10 Marks)  
b. Write a note on the following:  
i) Various safety devices used in case of rope haulages.  
ii) Applications of rope haulages with respect to various mining machines. (10 Marks)

### Module-2

- 3 a. Explain the arrangements of belt conveyor with neat sketch. (10 Marks)  
b. With a neat sketch, explain about cable belt conveyor. (10 Marks)

OR

- 4 a. With a neat sketch, explain about trolley wire locomotive. (10 Marks)  
b. Name the different types of locomotive used in underground mines. Compare their relative merits and demerits. (10 Marks)

### Module-3

- 5 a. Name the four different shape of drums used in Indian mining scenario for watching system and explain any two with neat sketches. (10 Marks)  
b. With a neat sketch explain multi-rope winding system. (10 Marks)

OR

- 6 a. With a neat labeled sketch explain the working principles of following pumps: (10 Marks)  
i) Centrifugal Pump ii) Turbine Pump.  
b. List and explain various applications of pumps in an open cast and underground mines. (10 Marks)

### Module-4

- 7 a. With a neat labeled sketch explain the working principle of continues miners in an underground mine. (10 Marks)  
b. TBM used for what purpose? With a neat labeled sketch explain working principle of TBM. (10 Marks)

**OR**

- 8 a. With a neat labeled sketch explain constructional features of rocker shovel. (10 Marks)  
b. List and explain the parameters to be considered to select LHD and SDL in an underground coal mines? (10 Marks)

**Module-5**

- 9 a. Shovels are used for what purpose? Explain the parameters to be considered for the selection of shovel. (10 Marks)  
b. With a neat labeled sketch explain constructional features of draglines. (10 Marks)

**OR**

- 10 a. With a neat labeled sketch explain the working of following machineries:  
i) Bucket wheel excavator. ii) Surface miners. (10 Marks)  
b. What are dredgers? Explain applicability and working principle of dredgers with suitable example. (10 Marks)

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