

CBCS SCHEME

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15MN651

Sixth Semester B.E. Degree Examination, June/July 2018 Mine Disasters and Rescue

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Explain the various classes of fires. Explain fire fighting, what kind of fire extinguisher will be the corrective choice in a mine where a fire is propagating from electric short circuiting. (08 Marks)
- b. Explain the prevention and control of surface and underground fires. (08 Marks)

OR

- 2 a. Explain the method of study of Atmosphere behind sealed off area. (08 Marks)
- b. Explain the method of Re – Opening of sealed off area. (08 Marks)

Module-2

- 3 a. Define spontaneous combustion of coal? Explain the factors governing spontaneous combustion. (08 Marks)
- b. Explain the inter protection of mine air samples and Graham's index. (08 Marks)

OR

- 4 a. Explain the stages and symptoms of spontaneous heating of coal. (08 Marks)
- b. What will be the lower limit of explosibility of the gas mixture if the mine gas emitted is a mixture of 80% methane, 10% hydrogen and 10% ethane? (08 Marks)

Module-3

- 5 a. Explain the causes by mechanism of fire damp explosion. (08 Marks)
- b. With a neat sketch explain the polish type shelf of a stone dust barrier. (08 Marks)

OR

- 6 a. With a sketch explain the water Barriers, used in coal mining. (08 Marks)
- b. Explain the methods of dewatering water logged working. (08 Marks)

Module-4

- 7 a. Explain the technical terms in lighting and photometry. A mining vehicle in candescent head light with a spot beam has an effective beam angle of 30°. What spherical surface area will the beam subtend at 10 and 20 Ft. (08 Marks)
- b. Explain the standard for lighting in open cast mines. (08 Marks)

OR

- 8 a. Explain the methods of illumination in underground mines. (08 Marks)
- b. Explain the methods of illumination survey in open cast mines. (08 Marks)

Module-5

- 9 a. With a neat sketch and label, explain the working of self contained Breathing Apparatus. (08 Marks)
- b. Explain the organization of Rescue. (08 Marks)

OR

- 10 a. With a neat labelled diagram, explain the self Rescuer. (08 Marks)
- b. Explain Recovery work in connection with fires and explosions. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.