GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF MINING ENGINEERING

LESSON PLAN

Discipline: MINING	Semester: 4th	Name of the Teaching Faculty: Prabhudutta Mishra	
Subject: MINE VENTILATION	No of Days/Week class alloted: 4	Semester from Date: 16/01/24 To Date: 26/04/24 No of weeks: 15	

Week	Class Day	Topics
1st	1st	Definition of natural ventilation and factors affecting natural ventilation.
	2nd	Definition of natural ventilation and factors affecting natural ventilation.
	3rd	Definition of natural ventilation and factors affecting natural ventilation.
	4th	Definition of natural ventilation and factors affecting natural ventilation.
2nd	1st	Describe the different types of Thermometer.
	2nd	Describe the different types of Barometer.
	3rd	Describe kata thermometer.
	4th	Describe water gauge.
3rd	1st	Calculate ventilation pressure by using pitot static tube.
	2nd	Explain effects of heat .Explain effects of humidity.
	3rd	Explain natural ventilation motive column, geothermic gradient.
	4th	Explain natural ventilation motive column, geothermic gradient.
4th	1st	Enumerate laws of mine air friction .
	2nd	Solve problems on above.
	3rd	**CLASS TEST-I**
	4th	Statutory provision as per CMR 2017.
5th	1st	Describe ventilation stopping
	2nd	Describe air crossing, ventilation door, brattice partition.
	3rd	Describe air crossing, ventilation door, brattice partition.
	4th	Describe different types of ventilation.
6th	1st	Accessional & declensional ventilation.
	2nd	Homotropal ventilation.Antitropal ventilation.
	3rd	Boundary ventilation.
	4th	Central & combined ventilation.
7th	1st	Explain splitting of air current.
	2nd	Solve numerical problems on splitting.
	3rd	Describe air locks at pit top
	4th	Explain construction principle of centrifugal flow fans.
8th	1st	Explain construction principle of centrifugal flow fans.
	2nd	**INTERNAL-I**
	3rd	State fan laws & calculate fan efficiency and capacity.
	4th	Explain installation of mine fan with reversal arrangement.
9th	1st	Explain installation of mine fan with reversal arrangement.
	2nd	Describe fan drift, fan drive, evasee and diffusers.
	3rd	Describe fan drift, fan drive, evasee and diffusers.
	4th	Explain fan characteristics and mine characteristics.
10th	1st	Describe methods of output control of mine fans.
	2nd	Describe installation ,location and purpose of booster fan.

	3rd	Describe installation ,location and purpose of booster fan.
	4th	**CLASS TEST-II**
11th	1st	Describe installation ,location and purpose of booster fan.
	2nd	Solve problems relating to booster fan.
	3rd	Describe systems of auxiliary ventilation.
	4th	Describe advantages & disadvantages of auxiliary ventilation.
12th	1st	Describe methods of pressure survey using barometer.
	2nd	Describe methods of pressure survey using gauge & pitot tube with manometer.
	3rd	Describe the method of measurement of cross-sectional area.
	4th	Describe the method of velocity measurements by using anemometer
13th	1st	Describe the method of velocity measurements by using velometer.
	2nd	Describe the method of velocity measurements by using pitot- static tube
	3rd	Describe the method of velocity measurements by using smoke & cloud method.
	4th	Determine percentage of oxygen, methane, carbon monoxide SO2 & H2S.
14th	1st	Describe causes and preventive measures of leakage of air in mines.
	2nd	Describe causes and preventive measures of leakage of air in mines.
	3rd	**INTERNAL-II**
	4th	Previous years questions disscussion.
15th	1st	REVISION/DOUBT CLEARING CLASS
	2nd	REVISION/DOUBT CLEARING CLASS
	3rd	REVISION/DOUBT CLEARING CLASS
	4th	REVISION/DOUBT CLEARING CLASS

RECOMMENDED BOOKS

SL.NO	Title of the Books	Name of Authors
1	Mine Ventilation	G B Mishra
2	EMT II	D J Deshmukh
3	Coal Mine Practices	E. Mason
4	Mine Ventilation	L C KAKU
5	UMS Volume -I	
6	SME HANDBOOK VOL-I & III	

Signature of Faculty