

Question Bank- Mine Ventilation

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2 Marks Questions

- Define geothermic gradient.
- State the advantages of splitting of air.
- Define splitting & coursing of air.
- Define kata factor.
- State the expression for cooling power of kata thermometer.
- What is natural ventilation?
- How natural ventilation can be achieved?
- Define motive column.
- What are the sources ,which contributes to the moisture content of mine air?
- State fan laws.
- State the effect of an evasee.
- How operating point is determined?
- Differentiate evasee & diffuser.
- What is nutral line?
- What is the basic principle of pressure survey in a mine?
- Which type of ventilation is done without mechanical means? How it is achieved?
- Define homotropeal & antitropeal Ventilation.
- Define central ventilation?
- Define ventilation stopping.
- Define brattice partition.
- What is boundary ventilation?
- What is natural ventilation?
- Define ventilation door.
- What is pressure survey?
- What is fan drift?
- State the effects of humidity in a mine?
- How natural ventilation happens?
- What are the composition of mine air?
- What is relative humidity?
- Differentiate natural & artificial ventilation.
- What are the effects of geothermic gradient?

5 Marks Questions

- ❖ What are the objectives of ventilation in a mine?
- ❖ Write a short note on water gauge.
- ❖ What is characteristics curve? State its uses.
- ❖ Describe the method of velocity measurement by using velometer.
- ❖ Describe the standard of ventilation.
- ❖ With an appropriate figure describe Ascensional & Descensional ventilation.
Write an expression for equivalent resistance(R) of an underground system of roadways having N

numbers of splits. Calculate the quantity of air which would flow in each splits if the total quantity is $200\text{m}^3/\text{min}$. Given that three splits in parallel of similar cross-section & same type of roadway surface are respectively 300m, 600m & 900m long.

- ❖ What are the sources of leakage of mine air in mines?
- ❖ Describe the method of velocity measurement by using anemometer.
- ❖ Explain about aneroid barometer.
- ❖ What is the need of ventilation in underground mine? State its objectives.
- ❖ What is artificial ventilation? How the air circulated by a fan can be varied?
- ❖ Describe the installation of booster fan.
- ❖ Describe the purpose & location of booster fan.
- ❖ State the sources of heat content of mine air.
- ❖ Calculate ventilation pressure using pitot static tube.
- ❖ Describe different types of thermometers.
- ❖ Describe the methods of output control of mine fans.
- ❖ Draw a neat sketch of air-crossing showing all the details of construction.
- ❖ Explain velocity measurement by smoke & cloud method.
- ❖ State the laws of mine air friction.
- ❖ Write a note on ventilation survey.
- ❖ Write the expression for relative humidity.
- ❖ Name artificial ventilators.
- ❖ State fan laws.
- ❖ Write a note on equivalent resistance.
- ❖ Explain mine characteristics curve, operating point & its uses.

10 Marks Questions

- What is air-crossing? With a sketch describe its construction.
- Describe the systems of auxiliary ventilation.
- State the sources & preventive measures for leakage of air in mines?
- Explain the principle of working of centrifugal fan. Describe the construction of sirocco fan.
- Describe air lock at pit top.
- Explain installation of mine fan with reversal arrangements.
- Describe german type airlock.
- With neat sketch explain the working of axial flow fan.
- Solve the problems on laws of mine air friction (L.C. Kaku)
- Describe the systems of auxiliary ventilation with its advantages & disadvantages.
- Describe installation, location & purpose of booster fan.
- Describe the method of measurement of cross-sectional area.
- Explain fan characteristics curve.