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C14-MNG-406

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**BOARD DIPLOMA EXAMINATION, (C-14)
OCTOBER/NOVEMBER-2018
DMNG – FOURTH SEMESTER EXAMINATION**

MINE ENVIRONMENTAL ENGINEERING

Time : 3 Hours]

[Total Marks: 80

PART-A

3X10=30

- Instructions :**
1. Answer **All** questions.
 2. Each question carries **three** marks.
 3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. State the purpose of ventilation.
2. Define the terms down cast and up cast shaft.
- * 3. Define the term motive column.
4. Classify the centrifugal fan based on the blades bent direction.
5. Write short note on regulator.
6. Define the term equivalent orifice.
7. List the limitations of splitting.
8. Define the term neutral line.
9. List the different components of ventilation survey.
10. Define the term “Ventilation Efficiency Quotient”.

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PART-B

10X5=50

Instructions :

1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. Explain the principle of air screw fan with a neat sketch.
12. A mine is ventilated by a fan producing $6000 \text{ m}^3/\text{min}$ at 75 w.g. The fan runs at 300 rpm and absorbs 160 B.H.P. To increase the volume of air flowing through the mine, the fan is speeded up to 400 rpm. Calculate
 - (a) Volume of air at new fan speed
 - (b) New w.g, B.H.P. and efficiency of the fan
13. Explain the accessional and declensional ventilation system with a neat sketch.
14. A total quantity of $100 \text{ m}^3/\text{min}$ of air is passing through two splits one airway is 2.5 m x 1.5m and 100m long and the other with similar linings is 2m x 1.5m and 125m long calculate the quantity of air passing in each split.
15. Explain the methods of reducing mine air resistance.
16. Explain auxiliary system of ventilation in double heading.
17. Explain the methods of conducting "Pressure survey".
18. Explain the method of determining the cooling power of mine air with the help of kata thermometer.
