



C16-MNG-407

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BOARD DIPLOMA EXAMINATION, (C-16)
MARCH/APRIL—2018
DMNG—FOURTH SEMESTER EXAMINATION
MINE VENTILATION

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

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

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1. State the purpose of ventilation.
2. List the limitations of natural ventilation.
3. List the merits and demerits of centrifugal fan.
4. List the factors for selection of fan for given mine conditions.
5. Define the term 'equivalent orifice'.
6. List the preventive measures of leakage of air.
7. List the merits of splitting air.
8. Define the term 'neutral line'.

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9. List the methods of quantity survey.
10. Explain the term 'kata factor'.

PART—B

10×5=50

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

11. (a) Define natural ventilating pressure.
(b) List the factors influencing the production of NVP.
12. Calculate the w.g. produced by a 3 m dia fan running at 250 r.p.m. and delivering 6000 m³/min of air, if the blades are (i) radial, (ii) bent backward at 35° and (iii) bent forward at 35°. Given radial velocity of flow = 3 m/sec, air density = 1.2 kg/m³.
13. Explain the construction, location, field of application of each of the ventilation devices.
14. Explain the accessional and descensional ventilation systems.
15. A district of a mine is ventilated by 30 m³/sec quantity of air and the water gauge across the district is 25 mm. If the quantity has to be reduced to 20 m³/sec by installing a regulator in the return of the district, calculate the size of the regulator.
16. State the necessity and factors to be considered for location of booster fan and explain neutral line.
17. Sketch and explain the instruments required for quantity survey.
18. Explain the objectives of ventilation survey.

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