

Q 1(i) Name the various combustion products those can create the effect of irritation in human body parts. Discuss the adverse effect in detail due to various irritants. 7

(ii) Define following terms with suitable examples: 7

a) Pyrolysis

b) Respiratory Acidosis

OR

(i) What is Oxygen Depletion? Why does oxygen depletion occur in the vicinity of fire? Describe effect on human body due to varying concentration of oxygen in atmosphere. 7

(ii) What is acidosis? Describe types of acidosis and why these occur? Discuss the effect of CO₂ on human health. 7

Q 2(i) How chemical smog is formed? State adverse effect of chemical smog. 7

(ii) What is Ozone depletion? How does it occur? Describe merit and demerits of Ozone depletion. 7

OR

(i) What is Green House Effect? How it is formed? Discuss important factors which contribute to Green House Effect. 7

(ii) What is Acid Rains? How it is formed? Explain its adverse effect on environment. 7

Q3 (i) Describe the Acute and Chronic effect of CO Poisoning due to spontaneous combustion in coal mines. 7

(ii) How can Hydrogen Sulphide gas be generated in coal mines? State the risks associated with exposure due to H₂S gas in mines. Express its exposure standards. 7

OR

(i) Give a detailed overview on Smoke Inhalation. 7

(ii) What is asphyxiation? Describe types of asphyxiation with suitable examples. 7

Q 4(i) What is Paradoxical movements? When does it occur? What is the role of various Accessory muscles?. 7

(P.T.O)

(ii) State the important techniques to perform a rapid assessment of the patient's neurological status and mental status. 7

OR

(i) Write short note on Inhalation Burns. Give important control measures. 7

(ii) What are the late neurological sequelae? How does it affect the victim's health? 7

Q 5 MCQs (Attempt any seven out of twelve) 14

1. Hyperthermia occur due to effect of
 - a. CO
 - b. HCN
 - c. Thermal
 - d. All of the above
2. Inhibition of cellular respiration can occur due to HCN which leads to:
 - a. Bradycardia
 - b. Cardiac arrhythmia
 - c. EEG
 - d. All the above
3. When a variable or an expression containing a variable approaches a limit, usually infinity is called
4. Catalytic convertor is the chosen method to reduce emission from motor vehicle.
5. The techniques used for early detection and prediction of spontaneous combustion is:
 - a. Gas Chromatograph
 - b. Mass Spectrophotometric
 - c. Thermal images
 - d. Audit
6. STEL of SO₂ is
 - a. 5 PPM
 - b. 3 PPM
 - c. 2 PPM
 - d. 1 PPM
7. A mine's safety and health management system is to provide for protecting persons from risks associated with exposure to flammable or toxic gas as per section of the Coal Mining Safety and Health Regulation 2001.
8. Chronic carbon monoxide exposure might increase the risk of developing the diseases in arteries :
 - a. Atherosclerosis
 - b. Anoxia
 - c. Hypoxemia

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- d. Pulmonary Edema
 - 9. Full form of COPD:
 - 10. A mismatch between pulmonary ventilation and perfusion leads to
 - a. Anoxia
 - b. Lead Poisoning
 - c. Atherosclerosis
 - d. Cyanosis
 - 11. Tachycardia is caused when fire victim exposed with
 - a. H₂S
 - b. CO
 - c. CO₂
 - d. HCN
 - 12. Quick assessment of the patient's circulation is done using common pulse located at elbow named:
 - a. carotid
 - b. brachial
 - c. radial
 - d. All the above
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