Q.15 M.S.D.S.
Q.16 Analysis techniques to evaluate the properties of a material, component or system.
Q.17 BLEVE.
Q.18 Fire Classification.
Q.19 Process Safety Hazard Analysis.
Q.20 Explosion.
Q.21 Purging.
Q.22 LD-50.

SECTION-C

Note: Short answer type Questions. Attempt any eight questions out of ten Questions. (8x5=40)

Q.23 What is flame proof light fitting.
Q.24 Explain onsite emergency Planning.
Q.25 What are different types of portable fire extinguisher? Explain how these are used (Any one type with neat sketch).
Q.26 What is deflagration & detonation.
Q.27 What is Toxicity Index? Explain.
Q.28 What precautions are required while transporting chemicals on road tankers.
Q.29 What is corrosion? How it is prevented.
Q.30 What precautions are essential while storage and handling of the gas cylinder.
Q.31 Explain the role of safety officer with respect to on site emergency plan.
Q.32 What you mean by confined space? What precautions are required before entry into it?

SECTION-D

Note: Long answer questions. Attempt any three questions out of four Questions. (3x10=30)

Q.33 Explain with a checklist the duties of safety officer for assessing chemical hazards in pharmaceutical industry?
Q.34 What precautions are required to be taken before entry into a vessel with toxic fumes? Explain with checklist.
Q.35 Explain categorization of Hazardous chemicals with the help of an example?
Q.36 What are the steps to be taken during leakage of ammonia?

No. of Printed Pages : 4 RLI-095407
Roll No. .....

1st Year / Industrial Safety
Sub.: Safety in Chemical Industry

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (10x1=10)

Q.1 In India, MSDS has been mandates under which law?
a) The manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
b) The Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996
c) The Factories Act, 1948
d) The Central Motor Vehicle Rules, 1989.

Q.2 The term "CHEMTREC" stands for
a) Chemical Transportation Emergency Centre
b) Chemical Training Centre
c) Chemical Treatment Centre
d) Chemical Toxicity Recovery Centre

Q.3 Which of the following statement is not correct about the term Oral LD50 Acute: ___ mg/kg (Rat) expressed in MSDS sheet?
1. The term "LD 50" means Lethal Dose 50 and it specifies doses of chemical substance expressed in milligram per kg body weight of the test animals.
2. Test Animals is rat and chemical has been given through oral route in short time frame.
3. 50% of the test animals are likely to die when exposed to the dose and given through route specified.
4. The same doses of the Chemical if given to another test animal will have the same result.

Q.4 Which of the following is not correct about "Flammable limit" of the Chemical Substance?

a) It indicate the concentration range of vapours of the Chemical Substance in which a flammable substance can produce a fire or explosion when an ignition source (such as spark or open flame) is present.
b) Below the lower flammable limit, the concentration of vapour in air is too low to burn.
c) Above the upper flammable limit, the concentration of vapour in air is too rich in fuel but deficient in oxygen to burn.
d) None of the above.

Q.5 Which of the following statement is correct about Flash point?

a) It is the lowest temperature at which vapours of the substance will have unsustained fire in presence of ignition source.
b) It is the lowest temperature at which vapours of the substance will have sustained fire in the presence of ignition source.
c) It is the lowest temperature at which vapours of the substance will automatic start burning even without presence of ignition source.
d) It is the lowest concentration at which vapours of the substance will have sustained fire in once ignited with ignition source.

Q.6 Which one of the following statements is correct about the term "Threshold Limit Value (TLV)"?

a) A concentration level expressed in ppm (part of the vapour per million part of contaminated air) upto which it is believed a worker can be exposed day after day for working without any adverse health effect.
b) A concentration level in ppm (part of the vapour per million part of contaminated air) upto which a worker can be exposed for a day (24 hrs) for working without any adverse health effect.
c) A concentration level in ppm (part of the vapour per million part of contaminated air) upto which a worker can be exposed for 12 hours without any adverse health effect.
d) A concentration level in ppm (part of the vapour per million part of contaminated air) to which it is believed a worker can be exposed for 4 hours without any adverse health effect.

Q.7 Which of the following heading of the section of the MSDS contained information about Physical and Chemical Characteristics of Chemical like odour, appearance, etc.?

a) Hazard Identification
b) Composition and Information on ingredients
c) Accidental Release Measures
d) Physical and Chemical Property

Q.8 While examining a consignment of hazardous chemical at Port, if your colleagues Custom Officer has been exposed to a chemical and has become unconscious, which one of the following action you should immediately take?

a) Immediately take him to the hospital
b) Immediately activate an emergency response system
c) Get hold of the MSDS sheet of the Chemical and look for the instruction in the section dealing with First Aid Measures and follow the instruction contained therin.
d) To call for ambulance

Q.9 As a Safety Officer, which section of the MSDS sheet will you refer to find out the information about Physical hazards of the Chemicals before inspecting or examing the consignment?

a) Hazards Identification
b) Stability and reactivity
c) First Aid Measures
d) Accidental Release Measures

Q.10 The term "Teratogenic Effect" with reference to exposure to the Hazardous Chemical, means,-

a) Effect on Genes
b) Effect on the unborn child
c) Effect on rate of cell mutation in the body
d) Effect of development of the Children

SECTION-B

Note: Very Short answer type questions. Attempt any ten questions out of twelve questions. (10x2=20)

Q.11 NFPA Classification of Chemicals.

Q.12 HAZOP.

Q.13 Ignition temperature.

Q.14 Light Obscuration type smoke detector.