

Time: 3 Hours

Maximum marks: 75

Q. 1 Choose the correct option and write answer along with the option code 20M

Sr No	Questions	Options
1	Which of the following is also called Detrivores?	a Decomposers
		b Herbivores
		c Carnivores
		d Omnivores
2	Explosion of a boiler is type of _____ explosion	a Mechanical
		b Fire
		c Chemical
		d Gas evolution
3	What is order of the steps in Risk management Process 1. Risk Analysis 2. Risk Review 3. Risk Control 4. Risk Identification 5. Risk Evaluation	a 1-2-3-4-5
		b 4-5-1-2-3
		c 4-1-2-5-3
		d 4-1-5-3-2
4	Temperature, light, air, water, soil, and climate are all _____ parts of the environment	a Biotic
		b Abiotic
		c Non-biotic
		d Living
5	If effluent is acidic then it is treated with-----	a Lime
		b Sulfuric acid
		c Sodium thiosulphate
		d Calcium acetate
6 ventilation which dilutes contaminated air in a whole building or room by blowing in clean air and exhausting some dirty air.	a Outdoor
		b Indoor
		c Dilution
		d Hard
7	Special dry powder can be used for ____ fire.	a Class A fire
		b Class B fire
		c Class C fire
		d Class D fire
8	_____ is technical document which provides detailed and comprehensive information designed to protect users from any hazard that may be associated with the chemical.	a MSDS
		b SOP
		c BMR
		d GHS

9	For chemical hazard control, what is at the top (Most Effective) of the control pyramid?	a	Engineering control
		b	PPE
		c	Administrative control
		d	Substitution
10	Acid rain is caused by the oxides of	a	Phosphorous & carbon
		b	Sulfur & Nitrogen
		c	Sulfur & Phosphorous
		d	Nitrogen & Carbon
11	Recommended limit for microbiological monitoring of operation clean areas is ----	a	10 Cf _u /m ³
		b	100 Cf _u /m ³
		c	<1 Cf _u /m ³
		d	500 Cf _u /m ³
12	The minimum air changes for Grade B and grade C areas should be ---- changes/hr	a	15
		b	18
		c	20
		d	25
13	Which of the following obscures shape and colour of an object and is a type of air pollution?	a	Smog
		b	Haze
		c	Acid rain
		d	Cloud burst
14	PMRA is an acronym for -----	a	Pest Management Regulatory Agency
		b	Palliative Management Regulatory Agency
		c	Preformulating Management Regulatory Agency
		d	Pollution management Regulatory Agency
15	Vessels that contain flammable or combustible vapors or pressurized gas can be cause of following Hazard	a	Ergonomic Hazard
		b	Explosion Hazard
		c	Biological Hazard
		d	Psychological Hazard
16	Probability of the event that might occur X Severity of the event if it occurs =	a	Hazard
		b	Risk
		c	Accident
		d	Mistake

17	Restoration of life of one who is apparently dead is known as	a	Decontamination
		b	Symptomatic treatment
		c	Resuscitation
		d	PPE
18	The BOD test is carried out for how many days?	a	1
		b	2
		c	3
		d	5
19	Multiple tube Fermentation technique is used for determination of	a	Non-Biological Contaminant
		b	Biological Contaminant
		c	Arsenic
		d	Lead
20	Which of the following can be used for prevention of dust hazard?	a	Evaporation
		b	Filtration
		c	Distillation
		d	Drying

Q 2. Attempt any two question

20 M

- i. a) What is safety? Explain elements of safety program.
- i. b) What are treatment levels of ETP? Explain in detail secondary treatment level.
- ii. a) Give Classification of hazardous gases. Comment on Hazardous Gas Management
- ii. b) Explain the terms with reference to chemical hazards: STEL, TWA, TLV and TLV ceiling
- iii. a) State full form of 'HVAC' and match the following

Air Grade	Max. permitted particles per m ³ in operation (>5 μm)
A	20000
B	2000
C	200
D	20
	0
	Not defined

- iii. b) What are air-based hazards? Give various sources and types of air hazards.

Q 3. Attempt any seven questions

35 M

- i. Discuss Mechanical hazards and ways to protect from the same
- ii. Enlist fire extinguishing methods. Suggest the type of fire extinguisher for the following:
Fire from pyrophoric reaction of Zn, Fire from cooking oil, Fire from cellulose
- iii. Explain Passivation and ventilation as preventive and protective management for fires and explosion
- iv. Explain any two evaluation tests for environmental control from the following:
Particle count, Slit to agar sampler, Rodac plates
- v. Define: Renewable and Non-renewable resources. Discuss importance of the Forest as a resource
- vi. Write a note on : Hazards based on radioisotopes
- vii. Explain in detail Hazards of organic synthesis
- viii. Discuss the terms: Elimination, Substitution, Engineering control, administrative control
- ix. What are pictograms? Give suitable examples to explain them
