Section A – (1 x 20) = 20 marks

1. Clark's method for removal of temporary hardness in water uses

   a) calcium hydroxide
   b) washing soda
   c) calcium chloride
   d) zeolite

2. Which of the following is not a characteristic of potable water?

   a) It must be free from suspended impurities
   b) It must be free from harmful bacteria
   c) It must contain traces of sodium bicarbonate
   d) It must have a fishy odour

3. Phosgene is a compound of

   a) red phosphorus and oxygen
   b) white phosphorus and oxygen
   c) carbon monoxide and chlorine
   d) carbon dioxide and chlorine

4. According to the modern Periodic Law, the properties of elements are periodic functions of their

   a) Valency
   b) atomic mass
   c) number of neutrons
   d) atomic number

5. The gas evolved when ammonium nitrate is heated is

a) Nitrogen
b) nitric oxide
c) nitrogen peroxide
d) nitrous oxide

6. In addition to nitric acid, another acid which may render iron passive is

a) acetic acid
b) oxalic acid
c) chromic acid
d) citric acid

7. Magnetism at the centre of a bar magnet is

a) minimum
b) maximum
c) zero
d) minimum or maximum

8. In the nitrogen cycle, denitrifying bacteria

a) oxidise ammonia to nitrates
b) convert nitrogen into ammonia
c) oxidise ammonia to free nitrogen
d) oxidise ammonia to oxides of nitrogen

9. Sound produced at a point is heard by a person after 5 second, while the same sound is heard by another person after 6 seconds. If the speed of sound is 300

m/s, what could be the maximum and minimum distances between the two persons?

a) 1.8 km, 0.15 km
b) 2.2 km, 0.20 km
c) 2.8 km, 0.25 km
d) 3.3 km, 0.30 km

10. Of the four locations mentioned below the highest inside temperature will be attained in the pressure cooker operated with the pressure valve open

a) at sea level
b) at the top of Mt. Everest
c) at a place in a valley below sea level
d) in an aeroplane flying at a height of 10,000 m with inside pressure maintained at the sea level

11. An aeroplane is flying horizontally with a velocity of 600 km/h and at a height of 1960 m. When it is vertically at a point A on the ground a bomb is released from it. The bomb strikes the ground at point B. The distance AB is

a) 1200 m
b) 0.33 km
c) 3.33 km
d) 33 km

12. Standard deviation is

a) Square root of mean deviation

b) Square root of variance

c) Both i and ii

d) None of the above

13. A pie chart is generally used to represent

a) Percentage

b) Average

c) Range

d) Both i and ii

14. Mode is

a) Middle most value

b) Most frequently occurring value

c) Highest value

d) Average value

15. 50^{th} percentile is generally known as

a) Mean

b) 2^{nd} quartile

c) Median

d) Both ii and iii

Section B – (1 x 20) = 20 marks

16. The resources that can be replaced by natural ecological cycle is called

a) Renewable
b) non-renewable
c) exhaustible
d) natural

17. An ecosystem consists of

a) Population
b) A biotic community
c) A population and its non-living elements
d) A biotic ecommunity and its non-living elements

18. A simple detritus food chain starts with

a) green plant
b) wastes of organisms and dead organisms
c) both of the above
d) none of these

19. Which one of the following has highest bioconcentration factor (BCF)?

a) DDT
b) DDE
c) Chlordane
d) Heptachlor

20. The entire series of communities of biotic succession from pioneer to climax community is known as

a) Troph
b) Sere

c) Population
d) Biome

21. Which of the following is an example of in situ conservation of biodiversity?

a) Captive breeding
b) Seed bank
c) National park
d) Pollen bank

22. What is the sequence of arrival of seismic waves at a recording station?

a) P-wave, S-wave, L-wave, R-wave.
b) S-wave, P-wave, R-wave, L-wave.
c) R-wave, L-wave, P-wave, S-wave.
d) S-wave, L-wave, R-wave, P-wave.

23. Permissible limit of day time noise exposure is

a) 85-90 dBA
b) 75-80 dBA
c) 95-100 dBA
d) 55-60 dBA

24. Principal constituents of atmospheric brown clouds are

I. Soot
II. Soil dust
III. Fly ash
IV. Sulphates and nitrates

Identify the correct code:

a) I & II only
b) I & IV only
c) II, III and IV only
d) I, II, III and IV

25. Stefan–Boltzmann law is related to radiation of …… and expressed in ……..power relationship

a) Upper atmosphere, 6^{th} power
b) Surface, 4^{th} power
c) Black body, 4^{th} power
d) Atmosphere, 6^{th} power

26. MJO is related to

a) Upper atmospheric vertical circulation
b) Surface atmospheric vertical circulation
c) Upper atmospheric horizontal circulation
d) Surface atmospheric horizontal circulation

27. In EMS, wave length is

a) Distance between the crest of two wave
b) More frequency longer wavelength
c) Less frequency shorter wavelength
d) All of the above

28. Pyranometer used to measure

a) Atmospheric pressure
b) Precipitation
c) Relative humidity

d) Solar radiation

29. Arrange the following in descending order according to hardness (Moh's Scale)

i) Gypsum, ii) Quartz, iii) Fluorite, iv) Topaz

a) i, ii, iii, iv
b) iv, iii, ii, i
c) iv, ii, iii, i
d) i, iii, iv, ii

30. Limnology is study of –

a) Lake
b) Glaciers
c) Limestone
d) River

31. Emissivity from surface can be properly recognized by –

a) Airphoto
b) Satellite image
c) Thermal image
d) Hyper spectral image

32. CFC contributes …….% of the total global warming

a) 49
b) 18
c) 13

d) 14

33. Absolute humidity is measures of –

a) gm/m^3
b) gm/ kg
c) percentage
d) none of the above

34. Bacteria helps in nitrification –

a) Azotobacter
b) Pseudomonas
c) Nitrosomonas
d) Bacillus mycoides

35. according to the pixel size, which image will be better

a) 0.5mx0.5m
b) 1mx1m
c) 13.6mx13.6m
d) 30mx30m

36. At the time of anticyclone, the wind in northern hemisphere flows

a) Clockwise
b) Anticlockwise
c) Upward
d) downward

37. United Nations Conference on Environment and Development (UNCED), Rio de Janeiro was held in the year of

a) 1993
b) 1999
c) 1987
d) 1992

38. The name of Sunderlal Bahuguna is associated with

a) Narmada Bachao Andolon
b) Silent Valley Project
c) Chipko Movement
d) Navdanya Movement

39. UNEP stands for

a) United Nations Environment Programme
b) United Nations Environmental Programme
c) United Nations Environment Project
d) United Nations Environment Principle

40. Which of the following is a critically endangered species

a) Black Rhino
b) Blue Whale
c) Red Panda
d) Black Spider Monkey

Section C – (5 x 2) = 10 marks

41. Write a brief note, how do you perceive your role after your M.Sc degree in disaster management.

42. Write a brief note on environmental pollution.

Space for Rough Work