

QB365 QUESTION BANK SOFTWARE

QB365 MODEL HALF YEARLY QUESTION 2024

8th Standard

Reg.No. :

Science

Time : 03:00:00 Hrs

Total Marks : 100

Section A

14 x 1 = 14

- 1) Which one the following systems of unit is the British System of unit?
(a) CGS (b) MKS **(c) FPS** (d) SI
- 2) Unit of pressure is
(a) pascal (b) Nm^{-2} (c) poise **(d) Both (a) & (b)**
- 3) If the focal length of a spherical mirror is 10 cm, what is the value of its radius of curvature?
(a) 10 cm (b) 5 cm **(c) 20 cm** (d) 15 cm
- 4) The property which allows metals to be hammered into their sheets is _____
(a) ductility **(b) malleability** (c) conductivity (d) tensile strength
- 5) Dissolved gases like sulphur dioxide, nitrogen oxides in rain water causes _____
(a) Acid rain (b) base rain (c) heavy rain (d) neutral rain
- 6) _____ shows both living and nonliving characteristics.
(a) Protozoa **(b) virus** (c) bacteria (d) Fungi
- 7) Plants that prevent soil erosion are
(a) algae (b) fungi **(c) bryophytes** (d) pteridophytes
- 8) Maintenance of constant internal environment of the body is known as _____
(a) Homeostasis (b) Homeophytes (c) Homeokinesis (d) Homeophilics
- 9) The process of converting a liquid into a solid is called _____.
(a) sublimation (b) condensation **(c) freezing** (d) deposition
- 10) When an ebonite rod is rubbed with fur, the charge acquired by the fur is
(a) negative **(b) positive** (c) partly positive and partly negative
(d) None of these
- 11) Carbon dioxide with water changes
(a) blue litmus to red (b) red litmus to blue (c) blue litmus to yellow
(d) doesn't react with litmus
- 12) The same proportion of carbon and oxygen in the carbon dioxide obtained from different sources proves the law of _____.
(a) reciprocal proportion **(b) definite proportion** (c) multiple proportion
(d) conservation of mass
- 13) External ear (pinna) is supported by
(a) bone **(b) cartilage** (c) tendon (d) capsule

14) _____ are the chemical substances, secreted by endocrine glands.

(a) **Hormones** (b) Enzymes (c) Proteins (d) Fatty acids

Section B

10 x 1 = 10

15) One mole of a substance contains _____ atoms or molecules.

6.023×10^{23}

16) The mirror used by the ophthalmologist to examine the eye is _____.

Concave mirror

17) Melting point of most metal is _____ than non-metal.

More (higher)

18) Iron objects undergo rusting when exposed to _____ and _____.

Water and oxygen

19) Bacteria, which have a flagellum at one end is classified as _____.

Monotrichous

20) _____ was the first man to walk on the surface of the Moon.

Neil Armstrong

21) The density of water is maximum at _____

4°C

22) In acidic solution the colour of the hibiscus indicator paper will change to _____

deep pink

23) Heating coal in the absence of air is called _____

destructive distillation of coal

24) The chemicals used for killing the weeds or inhibiting their growth are called _____

Herbicides

Section c

6 x 1 = 6

25) Mars is the smallest planet in the Solar system.

Answer : False

26) Bases are soapy to touch when they are dry

Answer : False

27) All bases are alkalis.

Answer : False

28) The first Indian satellite Aryabhata was launched in 1995.

(a) True (b) **False**

29) Mars orbiter Mission is America's first interplanetary mission.

(a) True (b) **False**

30) Kalpana chawra is the first Indian women astronaut to go to space.

(a) **True** (b) False

Section D

6 x 1 = 6

31) Speed of sound in air

330 ms^{-1}

32) Closed curves

Magnetic lines

33) Apollo - 8

First manned mission to the moon

34) Sewage

Water pollutant

35) Simplest hydrocarbon

Methane

36) Bio-fertilizer

Improve soil fertility

Section E

15 x 2 = 30

37) How many base quantities are included in SI system?

Answer : Seven base quantities are included in SI system.

38) How many hours are there in a minute?

Answer : There are 60 minutes in one hour (1/60 hour = 1 minute)

39) Give two examples to verify that a force tends to change the static condition of a body.

Answer : i) When a kicking force is exerted on a football at rest, it raises.
ii) When a pushing force is applied on a box at rest it moves.

40) How does surface tension help a plant?

Answer : Water molecules absorbed by the roots, get rised upwards to its top branches due to surface tension.

41) The radius of curvature of a spherical mirror is 20 cm. Find its focal length.

Answer : Radius of curvature = 20 cm

$$\text{Focal length (f)} = \frac{\text{Radius of curvat}}{2}$$
$$= \frac{R}{2} = \frac{20}{2} = 10 \text{ cm}$$

42) Why are bells made of metals?

Answer : Metals are Sonorous. On being hit, metals produce a typical ringing sound. So metals are used in making bells.

43) Mention any three compounds that exist in liquid state.

Answer : Three compounds that exist in liquid state are Hydrochloric acid, water, Sulphuric acid

44) Write three properties of metalloids.

Answer : i) Metalloids are all solid at room temperature.
ii) Metalloids can form alloys with other metals.
iii) The physical properties of metalloids tend to be metallic but their chemical properties tend to be non-metallic

45) Why photosynthesis is a chemical reaction?

Answer : Photosynthesis is an irreversible change. In photosynthesis carbondioxide and water react in the presence of sunlight to produce a new substance called starch. Hence photosynthesis is a chemical reaction

46) Define Metabolism?

Answer : Metabolism is the sum total of the biochemical reactions involves in release and utilization of energy or energy exchange within the organisms.

47) What is ICUN?

Answer : IUCN - International Union for Conservation of Nature.

48) What is photolysis?

Answer : Chemical reactions carried out by light are called photolysis.

49) What are bases?

Answer : The chemical substances that release hydroxide ions when dissolved in water are called as bases.

e.g. Sodium hydroxide, Potassium hydroxide.

50) What is underground mining?

Answer : In some places, coal beds are found very deep inside the earth. In underground tunnels are made to get the coal is called underground mining.

51) What is irrigation?

Answer : The supply of water to crops at regular intervals is called irrigation.

Section F

3 x 3 = 9

52) Write the four types of bacteria, based on their shape.

Answer : i) Bacilli - Rod shaped bacteria.

Eg. Bacillus anthracis

ii) Spirilla - Spiral shaped bacteria.

Eg. Helicobacter pylori.

iii) Cocci - Spherical or ball shaped bacteria

Eg. Streptococcus pneumoniae

iv) Vibrio - Comma shaped bacteria

Eg. Vibrio cholera

53) Write a note on thermostat.

Answer : Thermostat.

(i) A thermostat is a device which maintains the constant. temperature of a place or an object

(ii) The word thermostat is derived from two Greek words, thermo, meaning heat and 'static' meaning staying the same.

(iii) Thermostats are used in any device or system that gets heated or cools down to a pre-set temperature

(iv) It turns an appliance on or off when a particular temperature is reached.

(v) Sometimes, a thermostat functions both as the sensor and the controller thermal of a system.

(vi) Examples for thermostats include building heater, central heater in a room, air conditioner water heater, as well as kitchen equipments including oven and refrigerators.

54) What are antagonistic muscles? Give one example.

Answer : ► Muscles often work in pairs which work against each other. These are called antagonistic pairs.

► The two muscles, the biceps and triceps are working against each other.

► When the biceps contracts the lower arm is raised and the arm bends. In this position the triceps muscle is relaxed.

► To straighten the arm the reverse happens. The triceps contracts straightening the arm, while the biceps relaxes.

5 x 5 = 25

Section G

55) The temperature of a metal ball is 30°C. when an energy of 3000 J is supplied, its temperature raises by 40°C. Calculate its heat capacity.

Answer : Heat capacity, $C' = Q / \Delta T$

Here, $Q = 3000 \text{ J}$

$\Delta T = 40^\circ\text{C} - 30^\circ\text{C} = 10^\circ\text{C}$ or 10 K

$C' = 3000 / 10 = 300 \text{ JK}^{-1}$

The heat capacity of the metal ball is 300 JK^{-1} .

56) An energy of 84000 J is required raise the temperature of 2kg of water from 60°C to 70°C . Calculate the specific heat capacity of water.

Answer : Specific heat capacity, $C = Q / m \times \Delta T$

Here, $Q = 84000 \text{ J}$

$m = 2 \text{ kg}$

$\Delta T = 70^\circ\text{C} - 60^\circ\text{C} = 10^\circ\text{C}$ or 10 K

$C = 84000 / 2 \times 10 = 4200 \text{ J kg}^{-1} \text{ K}^{-1}$

The Specific heat capacity of water is $4200 \text{ J kg}^{-1} \text{ K}^{-1}$.

57) A hot 1 kg chunk of copper is allowed to cool to 100°C . It gives off 231 KJ of energy. What was the initial temperature of copper if its specific heat capacity is $385 \text{ J/kg}^\circ\text{C}$.

Answer : Mass $m = 1 \text{ kg}$

Heat energy released $Q = 231 \text{ KJ}$

$= 231 \times 1000 = 231000\text{J}$

Specific heat capacity $C = 385 \text{ J/kg}^\circ\text{C}$

Temperature difference $T = ?$

$$C = \frac{Q}{m \times \Delta T}$$

$$385 = \frac{231000}{1 \times \Delta T}$$

$$\Delta T = \frac{231000}{385}$$

$$\Delta T = 600^\circ\text{C}$$

Since copper is allowed to cool

$T = \text{Initial temperature} - \text{Final temperature}$

$600^\circ\text{C} = \text{Initial temperature} - 100^\circ\text{C}$

Initial temperature $= 600^\circ\text{C} + 100^\circ\text{C} = 700^\circ\text{C}$

The initial temperature of copper is 700°C .

58) What is the wavelength of a sound wave in air at 20°C with a frequency of 1000Hz ?

Answer : $v = 344 \text{ ms}^{-1}$ $n = 1000 \text{ Hz}$

$v = n\lambda$

$\lambda = v/n = 344/1000 = 0.344$

$\lambda = 0.344 \text{ m}$ or 34.40 cm

59) The frequency of a source of sound is 500 Hz . Calculate the number of times it vibrates in a minute.

Answer : $n = 500\text{Hz}$

Number of vibration in one second is called frequency(n)

Number of vibration in one minute $= n \times 60 = 500 \times 60 = 30,000$

\therefore $30,000$ times it vibrates

