

SCIENCE**Objective test****(LN : 1,2,4,7,9,10,14,& 15)****Class : X****Marks : 75****Duration : 1 hr.****Knowledge level**

1. Which of the following is inheritable?
i) an altered gene in sperm ii) an altered gene in liver cells
iii) an altered gene in skin cells iv) an altered gene in udder cells
2. The correct statement about Neanderthal man is:
i) the first human like hominid ii) started agriculture
iii) ate meat and walked erectly iv) buried the dead
3. Somatic gene therapy causes _____.
i) changes in sperm ii) changes in progeny
iii) changes in body cell iv) changes in ovum
4. _____ are the factors which form the physical basis of inheritance.
i) alleles ii) allomorph iii) genes iv) genotype
5. I am the paste enzyme that joins segments of DNA.
i) Endonuclease ii) DNA ligase iii) RNA ligase iv) Restriction enzyme
6. A child eats food rich in carbohydrates and avoids protein in its diet. Which type of nutritional deficiency will affect that child?
i) Kwashiorkar ii) Nyctalopia iii) Diabetes iv) Down syndrome
7. What is triple antigen?
i) DTT ii) BCG iii) DPT iv) DTP
8. An example of protozoan infecting our intestine is _____.
i) Plasmodium vivax ii) Entamoeba histolytica
iii) Trypanosoma gambiense iv) Taenia solium
9. One of the means of indirect transmission of a disease is _____.
i) sneezing ii) coughing
iii) through placenta iv) using utensils of patients
10. When antibodies, extracted from other animals are injected into your body, what kind of immunity do you gain?
i) Artificially active acquired immunity ii) Artificially passive acquired immunity
iii) Naturally active acquired immunity iv) Naturally passive acquired immunity
11. In sexual reproduction of flowering plants, the first event involved in this is _____.
i) fertilization ii) germination iii) regeneration iv) pollination
12. Which of the following is correctly matched?
i) False fruit – mango ii) Multiple fruit – apple
iii) Aggregate fruit – polyalthia iv) Caryopsis – banana
13. If a water soaked seed is pressed, a small drop of water comes out through the _____.
i) stomata ii) lenticel iii) micropyle iv) radical
14. Fleshy structure storing food for the embryo _____.
i) endosperm ii) epicarp iii) zygote iv) egg
15. The mango fruit is called a stone fruit because it has _____.
i) skinny epicarp ii) stony mesocarp iii) fleshy endocarp iv) hard endocarp
16. The particles in various forms are visible only under an ultramicroscope. A solution containing such particles is called _____ solution.
i) true ii) colloidal iii) suspension iv) aqueous
17. Soil cannot store more nitrogen than it can hold. Hence soil is said to be in a state of _____.
i) saturation ii) unsaturation iii) supersaturation iv) none
18. In an endothermic process, solubility increases with _____ in temperature.
i) increase ii) increase and then decreases
iii) decrease and then increases iv) decrease
19. If two liquids are mutually soluble, they are called _____ liquids.
i) dissolved ii) immiscible iii) miscible iv) diffused

20. The mixture of gases used by deep-sea divers is _____.
i) oxygen- helium ii) helium-oxygen iii) helium- nitrogen iv) oxygen-nitrogen
21. The freezing of biotechnology products like vaccines require _____ freezing system.
i) Helium ii) Nitrogen iii) Ammonia iv) Chlorine
22. The weight of a person is 50 kg. The weight of that person on the surface of the earth will be _____.
i) 50 N ii) 35 N iii) 380 N iv) 490 N
23. As a matter of convention, an anticlockwise moment is taken as _____ and a clockwise moment is taken as _____.
i) negative, positive ii) positive, negative
iii) zero, positive iv) positive, zero
24. If the radius of the earth is reduced to half of its present value, with no change in the mass, how will the acceleration due to gravity, be affected?
i) four times greater ii) four times lesser
iii) two times greater iv) two times lesser
25. The momentum of a massive object at rest is _____.
i) very large ii) very small iii) zero iv) infinity
26. One astronomical unit is the mean distance between the centre of the Earth and centre of the _____.
i) Moon ii) Sun iii) Mars iv) saturn
27. One light year is equal to _____.
i) $365.25 \times 24 \times 60 \times 60 \times 3 \times 10^8$ cm ii) $365.25 \times 24 \times 60 \times 60 \times 3 \times 10^8$ m
iii) $365.25 \times 24 \times 60 \times 60 \times 3 \times 10^{-8}$ cm iv) $365.25 \times 24 \times 60 \times 60 \times 3 \times 10^{-8}$ m
28. _____ have equal number of neutrons.
i) Isobars ii) Isotones iii) Isotopes iv) Mass Numbers
29. The atomicity of Nitrogen is _____.
i) 1 ii) 2 iii) 3 iv) 4
30. Atomicity is equal to _____.
i) Molecular mass / Atomic mass ii) Molecular mass / Atomic number
ii) Atomic mass / Molecular mass iv) Atomic number / Molecular mass

UNDERSTANDING LEVEL

1. _____ is used to cure AIDS.
i) Biosensor ii) Somatic stem cells iii) Gene therapy iv) Bio chips
2. _____ is used to increase the crop productivity.
i) nif - genes ii) anti viral proteins iii) growth hormones iv) antibiotics
3. Match the following:

Vitamins	Deficiency Diseases
(A) Vitamin D	(k) pellagra
(B) Vitamin B1	(l) Haemorrhage
(C) Vitamin K	(m) Rickets
(D) Vitamin B5	(n) Beri - beri

- i) (m), (n), (l), (k) ii) (k), (m), (l), (n) iii) (l), (n), (k), (m) iv) (m), (n), (k), (l)
4. Identify the wrong statement:
i) Tuberculosis is a bacterial disease. ii) It is spread by mosquito bite
iii) It affects lungs, bones, kidney etc. iv) BCG vaccine is administered to cure
5. The fruit which develops from pentacarpellary, syncarpous inferior ovary is _____.
i) apple ii) cucumber iii) mango iv) polyalthia
6. Which of the following statement is true:
i) Thin walled motile spores are called Zoospores.
ii) Thin walled motile spores are called Aplanospores.
iii) Uninucleate, motile asexual spores are called conidia
iv) A motile asexual spores produced by fungi.
7. India's first national park is
i) Kanha national park ii) Bandhipur national park
iii) Corbett national park iv) Manas wildlife sanctuary
8. Which of the following is the product of green chemistry?
i) Biodiesel ii) Bioalcohol iii) Lead free solders iv) Bio ether

9. Diffusion of particles takes place in ____ solution.
i) suspension ii) colloidal iii) true iv) saturated
10. Solubility of oxygen is _____ in cold water.
i) more ii) less
11. Avogadro number is
i) 6.203×10^{23} ii) 6.023×10^{-23} iii) 6.203×10^{-23} iv) 6.023×10^{23}
12. Gram Molar volume of oxygen is _____.
i) 22.4 lit ii) 20.4 lit iii) 20.2 lit iv) 24.2 lit
13. Mass of the Earth can be calculated by using the formula
i) $M = \frac{G}{gR^2}$ ii) $M = \frac{gR^2}{G}$ iii) $M = \frac{G}{g}$ iv) $M = \frac{G}{R^2}$
14. How many payloads are carried by Chandrayaan?
i) 11 ii) 12 iii) 6 iv) 5
15. Name the space stations which carry two docking ports for study.
i) Salyut 6 and Salyut 7 ii) skylab iii) Mir iv) both (i) and (ii)

APPLICATION LEVEL

1. The number of moles in 12.046×10^{22} atoms of copper is
i) 0.25 moles ii) 0.1 moles iii) 2 moles iv) 1 mole
2. Gram molecular mass of H_2O is
i) 20g ii) 7g iii) 18g iv) 16g
3. Find the number of moles in 40 g of calcium
a) 0.1 mole ii) 1 mole iii) 0.5 mole iv) 0.25 mole
4. Unit of relative atomic mass is
i) g ii) moles iii) $gmol^{-1}$ iv) no unit
5. The quantity of the substance is expressed in _____.
i) kilogram ii) mole iii) gram iv) calories
6. The impact produced by an object depends on _____.
i) velocity ii) mass iii) force iv) mass and velocity
7. An object is moving with the velocity of 20 m/s. a force of 10 n is acting in a direction perpendicular to its velocity. What will be the speed of the object after 10 seconds?
i) 40 m/s ii) 15m/s iii) 20 m/s iv) 10 m/s
8. If the density of the earth is reduced to half to that of its original value, the radius remaining the same, what will be the acceleration due to gravity?
i) $9.8 m/s^2$ ii) $19.6 m/s^2$ iii) $58.8 m/s^2$ iv) $10.2m/s^2$
9. Which would require a lesser force for accelerating an object A has 1 kg mass at $3 ms^{-2}$ or object B has a 2 kg mass at $2 ms^{-2}$?
i) Object A ii) Object B iii) Both has equal force
10. The unit of weight is _____.
i) kilogram ii) Newton iii) gram
11. _____ is derived from amyloproteins of bacteria.
i) Sucrase ii) Maltase iii) Amylase iv) Amyloproteinase
12. What kind of immunity do you acquire when you are exposed to infectious diseases?
i) Naturally acquired passive immunity ii) Artificially acquired passive immunity
ii) Naturally acquired active immunity iv) Artificially acquired active immunity
13. Identify the mis-matched pairs:

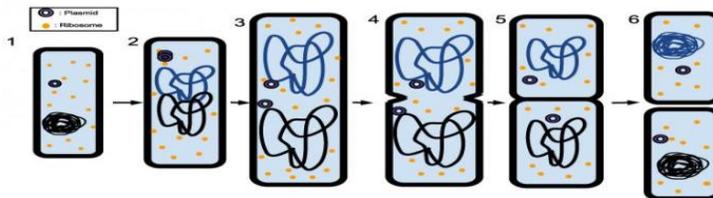
	Tiger reserve	Location
A	Sunderbans National park	West Bengal
B	Bandhipur National Park	Gujarat
C	Kanha National Park	Madhya Pradesh
D	Manas wild life sanctuary	Uttaranchal

- i) A and B ii) B and C iii) A and D iv) B and D

14. Pollen grains of water plant have _____ covering to protect from getting wet.
 i) Double walled ii) thin walled iii) mucilaginous iv) subcutaneous
15. Screw gauge contains _____ .
 i) Pitch scale and head scale ii) main scale and head scale
 iii) Pitch scale and main scale iv) head scale and main scale

CREATIVE

1. In Mendel's monohybrid cross, he showed the genotypic ratio as 1:2:1, What are the traits fall in these ratio?
 i) homozygous dominant, heterozygous recessive, homozygous recessive
 ii) homozygous recessive, homozygous dominant, heterozygous dominant
 iii) homozygous dominant, heterozygous dominant, homozygous recessive
 iv) homozygous recessive, homozygous dominant, heterozygous recessive
2. The first vaccine was used against Hepatitis B virus is
 i) HBV ii) BCG iii) DPT iv) HBB
3. Human hair colour is determined by the pigment Eumelanin and Pheomelanin. Eumelanin gives either black or white colour to the hair. If one parent has low concentration of black Eumelanin as dominant trait and other has high concentration of black Eumelanin as recessive trait, then their first offspring has _____ colour of hair
 i) brown ii) black iii) white iv) neither black nor brown
4. Assertion (A) : Diabetes Insipidus is due to the lack of reabsorption of water by kidney leads to expulsion of concentrated urine by the patients.
 Reason (R) : Due to the low secretion of Antidiuretic hormone.
 i) Both (A) and (R) are true. R explains A ii) Both (A) and (R) are wrong
 iii) Only (A) is true but (R) is false iv) (A) is false but (R) is true
5. Identify the correct statement:
 i) Blood sugar level is 80 – 120 mg/dl under fasting condition.
 ii) Blood sugar level is 80 – 120 g/dl under fasting condition.
 iii) blood sugar level is 8.0 – 12.0 mg/dl under postprandial condition
 iv) Blood sugar level is 8.0 – 12.0 g/dl under postprandial condition
6. Opportunistic infections include _____ .
 i) Tyberculosis, Malaria, Candiiasis.
 ii) Malaria, Candiiasis, Recurrent herpes zoster
 iii) Tuberculosis, Candiiasis, recurrent herpes zoster
 iv) Tuberculosis, Malaris, Recurrent herpes zoster
7. Observe the diagram and choose the correct stages / process:



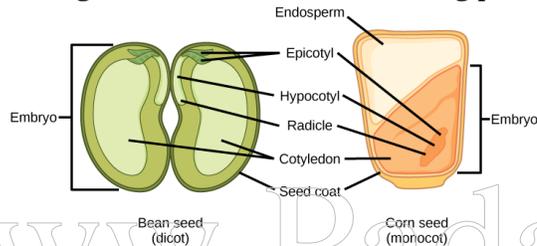
- i) Chromatin formation – DNA replication – Septum formation – Nucleokinesis- cytokinesis
 ii) DNA replication - Chromatin formation- Septum formation- cytokinesis- Nucleokinesis
 iii) Chromatin formation- Septum formation- DNA replication- Nucleokinesis- cytokinesis
 iv) Septum formation- DNA replication- Nucleokinesis- cytokinesis- Chromatin formation
8. The Non-hazardous wastes are managed by either undergo recycling or by reuse the products, then the Green waste is managed by _____.
 i) Composting ii) Garden waste dumping iii) Anaerobic digestion iv) all

9. Observe the picture and match with the type:

1		a) Achene
2		b) Sorosis
3		c) Legume
4		d) Pome

- i) 1-(c), 2 - (d), 3 (b), 4(a) ii) 1 -(d), 2 - (c), 3 (a), 4(b)
 iii) 1 -(b), 2 - (d), 3 (a), 4(c) iv) 1 -(d), 2 - (a), 3 (b), 4(c)

10. Observe the diagram and find out the missing parts:



- i) A) Embryo, B) Radicle, C) Seed coat, D) Endosperm
 ii) A) Radicle, B) Embryo, C) Seed coat, D) Endosperm
 iii) A) Embryo, B) Seed coat, C) Radicle, D) Endosperm
 iv) A) Radicle, B) Endosperm, C) Seed coat, D) Embryo

11. Place the organisms in the correct food chain path:

- i) A) Locust, B) Maize, C) Lizard, D) Snake ii) A)Maize, B) Lizard, C) Locust, D) Snake
 iii) A)Maize, B) Locust, C) Lizard, D) Snake iv) A)Maize, B) Locust, C) Snake, D) Lizard

12. Which of the following is used as alternatives to petroleum based vehicle fuel:

- i) Hydrogen fuel, CNG, Biofuel, Compressed air.
 ii) Liquid helium, LPG, CNG, Hydrogen fuel
 iii) Liquid hydrogen, Biofuel, biodiesel, CNG
 iv) Compressed gas, natural gas, Bioether, Biodiesel

13. If a base ball is thrown at 150 ms^{-2} and its mass is 0.50 kg what force is necessary to change its direction?

- i) 15 N ii) 10 N iii) 75 N iv) 7.5 N

14. An object is thrown straight upward with a speed of 18m/s. How long did it take to get to its highest point?

- i) 1.83 sec ii) 19.6 sec iii) 20.sec iv) 183 sec

15. A duck stands on one end of a see-saw, 5m away from the pivot. If the weight of the duck is 10 N. Find the moment.

i) 10N

ii) 15N

iii) 0.2N

iv) 2N

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SCIENCE
(LN : 5,6,8,12,13,17)

Class : X
Marks : 75

Duration : 1 hr.

Knowledge level

1. Which blood cells of mammals are concerned with immunity?
i) Young Erythrocytes ii) Leucocytes iii) Thrombocytes iv) Matured Erythrocytes
2. Forelimbs of mammals have a common basic structure or pattern, but are different in their usage/ function in different animals. They can be called _____.
i) Homologous organs ii) Analogous organs
iii) Vestigial organs iv) Rudimentary organs
3. Pick out an animal which has a four-chambered stomach.
i) Elephant ii) Dolphin iii) Deer iv) Kangaroo
4. The epidermis of mammals contains _____.
i) hair, bristles, quills ii) hair, nails, claws
iii) hair, bristles, horns iv) hair, nails, scales
5. Assertion (A) : Mammalian heart is called myogenic heart.
Reason (R) : Heartbeat is regulated by a specialized muscle bundle (pacemaker) in mammals.
i) Both 'A' and 'R' are true and 'R' explains 'A'.
ii) Both 'A' and 'R' are true but 'R' doesn't explain 'A'.
iii) 'A' is true but 'R' is false.
iv) A is false but 'R' is true.
6. In monotropa the special type of root which absorbs nourishment is the _____.
i) Mycorrhizal root ii) Haustoria iii) Clinging root iv) Adventitious root
7. Leaf pores / stomata help in _____.
i) intake of CO₂ during photosynthesis ii) release of O₂ during photosynthesis
iii) release of water vapour during transpiration iv) All of these
8. The special root-like structure of plant parasites in cuscuta and viscum are called _____.
i) Rhizoids ii) Haustoria iii) Hyphae iv) Stolons
9. _____ of green plants are called factories of food production.
i) Mitochondria ii) Chloroplasts iii) Nucleus iv) Endoplasmic reticulum
10. The xylem in the plants is responsible for _____.
i) transport of water ii) transport of food
iii) transport of amino acids iv) transport of oxygen
11. Which is a non-renewable resource?
i) coal ii) petroleum iii) natural gas iv) all the above
12. An example of water-borne disease is _____.
i) scabies ii) dracunculiasis iii) trachoma iv) typhoid
13. _____ is the chief component of natural gas.
i) ethane ii) methane iii) propane iv) butane
14. The sedimented and floating materials are removed by this treatment process.
i) primary treatment ii) secondary treatment
iii) tertiary treatment iv) peripheral treatment
15. Name a diseases caused by polluted water
i) Cholera ii) AIDS iii) Amoebiasis iv) Rabies
16. An element which is an essential constituent of all organic compounds belongs to the _____ group.
i) 14th group / 15th group)
17. The third period contains elements. Out of these elements, how many elements are non-metals? (8,5)
18. In the modern periodic table, periods and groups are given. Periods and Groups indicate _____.
i) Rows and Columns ii) Columns and Rows
19. An element which is an essential constituent of all organic compounds belongs to the _____ group. (14th group / 15th group)
20. Gold does not occur in the combined form. It does not react with air or water. It is in the _____ state. (native / combined)
21. Buckminster fullerene is the allotropic form of _____. (Nitrogen / Carbon / Sulphur)
22. The formula of methane is CH₄ and its succeeding member ethane is expressed as C₂H₆. The common difference of succession between them is _____. (CH₂ / C₂H₂)

11. Find the odd one out:
 a) Ethane, methane, ethane, propane
 b) Ethyne, propene, propyne, ethyl acetylene
12. The stronger acid among these _____.
 i) HCOOH ii) CH₃COOH iii) CH₃CH₂COOH iv) CH₃CHCOOH
13. A ____ mirror and ____ lens always form virtual and diminished image.
 i) convex ii) concave iii) plane
14. The focal length of a concave lens is 2 m. Calculate the power of the lens.
 i) -0.5D ii) 0.5D iii) -1.0D iv) 1.0D
15. Find the focal length of convex mirror of radius of curvature 1m.
 i) 5m ii) 5cm iii) 0.5m iv) 0.5cm

APPLICATION LEVEL

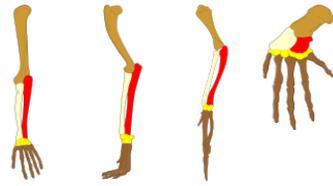
1. An object 1cm high is held near a concave mirror of magnification 10. How tall will be the image?
 i) 10cm ii) -10cm iii) 10m iv) -10m
2. Calculate the speed of light in water of refractive index is 4/3.
 i) 2 x 10⁸m/s ii) 2.25 x 10⁸m/s iii) 3 x 10⁸m/s iv) 3.25 x 10⁸m/s
3. The power of lens is 2.5D. What is focal length?
 a) 0.4m ii) 1.4cm iii) 0.4cm iv) 1.4m
4. For a convex mirror, always image distance : _____.
 For a concave lens always image distance : _____.
5. The distance between the _____ and the _____ of a spherical mirror is called the focal length.
6. Match the following:

Molecular formula	Common Name
CH ₃ OH	Dimethyl ketone
CH ₃ CHO	Acetic acid
CH ₃ COCH ₃	Acetaldehyde
CH ₃ COOH	Methyl alcohol

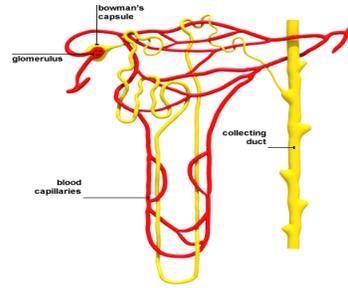
7. Ethanoic acid turns _____ litmus to _____.
 i) Red, blue ii) blue, red
8. The meaning of paraffin in latin is _____.
 i) more affinity ii) little affinity
9. Spot the error:
 a) When a piece of sodium is dropped into ethanol, oxygen is released and the solution becomes cold.
 b) Ether reacts with Na to liberate N₂ gas.
10. Ethanol reacts with _____ to give power alcohol.
 i) petrol ii) pyridine iii) 5% of methanol
11. The attachment between the parents and the offspring is called _____.
 i) imprinting ii) filial imprinting iii) filial care iv) parental care
12. Spot the error:
 a) Respiratory substrate are of 4 kinds.
 b) The end products of respiration is O₂ and H₂O.
13. Bioethanol is mostly derived from plants material of _____.
 i) sugar & pulses ii) starch crops & fibres
 iii) sugar & drum sticks iv) starch crops & sugar
14. The gangue present in haematite ore is _____.
 i) FeSiO₃ ii) CaSiO₃ iii) ZnSiO₃ iv) CuSiO₃
15. State whether the following statement is true or false:
 a) An electric motor converts mechanical energy into electrical energy.
 b) An electric generator works on the principle of electromagnetic induction.
 c) The field at the centre of a long circular coil carrying current will be parallel straight lines.
 d) An AC generator has bidirectional flow of current by using split rings.

CREATIVE

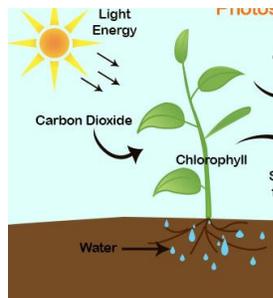
1. Observe the figure a, b, c & d.
a) Identify the forelimb depicted in figure A to D.



2. Answer the questions related to the figure:
a. Name the diagram.
b. Where is this structure found ?



3. Assertion : (A) WBC are not concerned with phagocytosis or engulfing the germs.
Reason: (R) WBC produce antibodies to resist the germs entering the body.
i) A is right and R is wrong ii) R is right and A is wrong
iii) R explains A iv) R does not explain A
4. Pick out the statement supporting the term saprophytes:
a) obtain nourishment from living organism.
b) Obtain nourishment from non living organism
c) Obtain nourishment through photosynthesis.
d) Obtain nourishment from non living organic matter
5. Answer the following questions for the touch me not plant:
a. Write the botanical name.
b. What type of movement is seen in this plant?
6. Observe the diagram:
a) What type of reaction takes place?
b) Write the bio-chemical reaction.



7. The element X contains 6 electrons in M shell. It belongs to _____.
i) 3 period and 16 group ii) 3 period and 15 group
iii) 4 period and 15 group iv) 4 period and 16 group
8. Write the period and group number of Fluorine and neon.
9. Cryolite is the combined ore of _____.
i) Al & Cu ii) Al & Na iii) Al & Pb iv) Al & Zn
10. Name the lens which always gives virtual and erect image?
i) concave ii) convex

