

iQuest Scholarship Cum Admission Test

**FOR CLASS 10th
MOVING TO CLASS 11th (ASPIRE MED.)
SAMPLE TEST**

Time: 1.5 Hrs

Max Marks : 260

| SYLLABUS & SCHEME | | |
|-------------------|-----|---------------|
| SUBJECTS | Qs. | SYLLABUS |
| PHYSICS | 20 | Full Syllabus |
| CHEMISTRY | 20 | Full Syllabus |
| BIOLOGY | 25 | Full Syllabus |

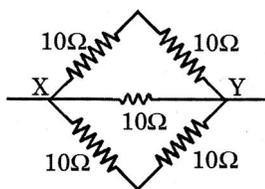
INSTRUCTIONS TO CANDIDATE

- Each subject in this paper consists of multiple choice questions with only one correct answer. **+4 marks** will be awarded for correct answer and **-1 mark** for wrong answer.
- Please read the instructions given for each question carefully and fill the correct answer against the question numbers on the answer sheet in the respective subject.
- Use blue or black ball point pen to darken the appropriate circle & mark should completely fill the circle.
- The Question paper contains blank spaces for your rough work. No additional sheet will be provided for rough work.
- Blank papers, Clipboards, Log Tables, Slide rule, Calculators, Cellular phones, Pagers and Electronic gadgets in any form are not allowed.
- Write your Name, Student ID in the block at the top of the Answer Sheet. Also write your Name & Student ID in the space provided on this cover page of question paper.
- **This is a Sample Test Paper. The actual Paper Pattern may vary in terms of duration and sections. However the syllabus will be same.**

Name: _____ Student ID _____

PHYSICS

1. The electrostatic force between two point charges q_1 and q_2 at separation 'r' is given by $F = \frac{Kq_1q_2}{r^2}$. The constant K
- (A) depends on the system of units only.
(B) depends on the medium between the charges only.
(C) depends on both the system of units and the medium between the charges.
(D) is independent of both the system of units and the medium between the charges.
2. When the value of each resistor is $10\ \Omega$, the equivalent resistance between the terminals X and Y of the circuit is :



- (A) $1\ \Omega$ (B) $3\ \Omega$
(C) $5\ \Omega$ (D) $8\ \Omega$
3. In a circuit two or more cells of the same e.m.f are connected in parallel in order to:
- (A) increase the P.D across a resistance in the circuit
(B) decrease the P.D across a resistance in the circuit
(C) facilitate drawing more current from the battery system
(D) change the e.m.f. across the system of batteries
4. Two electrical bulbs have tungsten filament of same length. If one of them gives 60 watts and other 100 watts, then
- (A) 100 watts bulb has thicker filament
(B) 60 watt bulb has thicker filament
(C) both filaments are of same thickness
(D) it is impossible to get different wattage unless lengths are different
5. An electric current passes through a long straight wire. At a distance 5 cm from wire, the magnetic field is B. The field at 20 cm from the wire would be:
- (A) 2B (B) B/4
(C) B/2 (D) B
6. An electric charge in uniform motion produces:
- (A) an electric field only
(B) a magnetic field only
(C) both electric and magnetic fields
(D) no such field at all
7. The fact that magnetic field is produced around a wire carrying a current, was discovered by
- (A) Faraday (B) Oersted
(C) Maxwell (D) Joule
8. When the current is passing through the straight wire then, the associated magnetic field is
- (A) Straight (B) Elliptical
(C) Circular (D) Parabolic.
9. When current is circular, the associated magnetic field is
- (A) Straight (B) Elliptical
(C) Circular (D) Parabolic.
10. When current flows clockwise in a loop, the polarity of its face is
- (A) East (B) South
(C) West (D) North.
11. When current flows anticlockwise in a loop the magnetic polarity of the face is
- (A) East (B) South
(C) West (D) North.
-

12. For a solenoid carrying a current I and having n turns per unit length, wrapped on a core of permeability μ , the correct expression for magnetic field intensity (B) is
- (A) $B = \frac{\mu_0}{\mu} nI$ (B) $B = \frac{\mu_0 \mu I}{n}$
 (C) $B = \mu_0 m n I$ (D) $B = \frac{\mu_0 \mu n}{I}$
13. A mirror forms a virtual image of a real object.
 (A) It must be a convex mirror.
 (B) It must be a concave mirror.
 (C) It must be a plane mirror.
 (D) It may be any of the mirrors mentioned above.
14. The angle of incidence is the angle between
 (A) the incident ray and the surface of the mirror
 (B) the reflected ray and the surface of the mirror
 (C) the normal to the surface and the incident ray
 (D) the normal to the surface and the reflected ray
15. A ray of light is incident on a concave mirror. If it is parallel to the principal axis, the reflected ray will
 (A) pass through the focus
 (B) pass through the centre of curvature
 (C) pass through the pole
 (D) retrace its path
16. If an incident ray passes through the centre of curvature of a spherical mirror, the reflected ray will
 (A) pass through the pole
 (B) pass through the focus
 (C) retrace its path
 (D) be parallel to the principal axis
17. Other names for myopia are
 (A) hyperopia and hypermetropia
 (B) long-sightedness and hyperopia
 (C) near-sightedness and presbyopia
 (D) near-sightedness and short-sightedness
18. The wavelengths corresponding to violet, yellow and red lights are λ_v , λ_y and λ_r respectively.
 (A) $\lambda_v > \lambda_y > \lambda_r$ (B) $\lambda_v < \lambda_y < \lambda_r$
 (C) $\lambda_y < \lambda_v < \lambda_r$ (D) $\lambda_y < \lambda_r < \lambda_v$
19. When light rays enter the eye, most of the refraction occurs at the :
 (A) crystalline lens
 (B) outer surface of the cornea
 (C) iris
 (D) pupil
20. Which of the following phenomena contributes significantly to the reddish appearance of the sun at sunrise or sunset?
 (A) Dispersion of light
 (B) Scattering of light
 (C) Total internal reflection of light
 (D) Reflection of light from the earth

CHEMISTRY

21. The following reaction is an example of a
 $4\text{NH}_3(\text{g}) + 5\text{O}_2(\text{g}) \rightarrow 4\text{NO}(\text{g}) + 6\text{H}_2\text{O}(\text{g})$
(i) displacement reaction (ii) combination reaction
(iii) redox reaction
(iv) neutralisation reaction
(A) (i) and (iv) (B) (ii) and (iii)
(C) (i) and (iii) (D) (iii) and (iv)
22. Which of the following are exothermic processes?
(i) Reaction of water with quick lime
(ii) Dilution of an acid
(iii) Evaporation of water
(iv) Sublimation of camphor (crystals)
(A) (i) and (ii) (B) (ii) and (iii)
(C) (i) and (iv) (D) (iii) and (iv)
23. What happens when a solution of an acid is mixed with a solution of a base in a test tube?
(i) The temperature of the solution increases
(ii) The temperature of the solution decreases
(iii) The temperature of the solution remains the same
(iv) Salt formation takes place
(A) (i) only (B) (i) and (iii)
(C) (ii) and (iii) (D) (i) and (iv)
24. During the preparation of hydrogen chloride gas on a humid day, the gas is usually passed through the guard tube containing calcium chloride. The role of calcium chloride taken in the guard tube is to
(A) absorb the evolved gas
(B) moisten the gas
(C) absorb moisture from the gas
(D) absorb Cl^- ions from the evolved gas
25. Aluminium is used for making cooking utensils. Which of the following properties of aluminium are responsible for the same?
(i) Good thermal conductivity
(ii) Good electrical conductivity
(iii) Ductility
(iv) High melting point
(A) (i) and (ii) (B) (i) and (iii)
(C) (ii) and (iii) (D) (i) and (iv)
26. What happens when calcium is treated with water?
(i) It does not react with water
(ii) It reacts violently with water
(iii) It reacts less violently with water
(iv) Bubbles of hydrogen gas formed stick to the surface of calcium
(A) (i) and (iv) (B) (ii) and (iii)
(C) (i) and (ii) (D) (iii) and (iv)
27. Which of the following is an example of a 'decomposition' reaction -
(A) $\text{CaO} + \text{CO}_2 \rightarrow \text{CaCO}_3$
(B) $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
(C) $\text{Cu} + 2\text{Ag}^+ \rightarrow \text{Cu}^{2+} + 2\text{Ag}$
(D) $\text{CuSO}_4 + \text{H}_2\text{S} \rightarrow \text{CuS} + \text{H}_2\text{SO}_4$
28. The process of oxidation involves -
(A) The absorption of hydrogen atoms
(B) The absorption of electrons
(C) The release of electrons
(D) Neither absorption nor release of electrons
29. The number of molecules of water of crystallisation present in washing soda crystals is:
(A) five (B) two
(C) ten (D) seven
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BIOLOGY

41. _____ is a gaseous plant hormone.
(A) IBA (B) Ethylene
(C) Abscisic acid (D) NAA
42. Which plant hormone promotes dormancy in seeds and buds?
(A) Auxin (B) Gibberellin
(C) Cytokinin (D) Abscisic acid
43. Which of the following events in the mouth cavity will be affected if salivary amylase is lacking in the saliva?
(A) Starch breaking down into sugars.
(B) Proteins breaking down into amino acids.
(C) Absorption of vitamins.
(D) Fats breaking down into fatty acids and glycerol.
44. Which of the following is the largest gland of the human body?
(A) Gastric glands (B) Pancreas
(C) Liver (D) Salivary Glands
45. The small intestine receives secretions from...
(A) liver (B) pancreas
(C) both liver and pancreas
(D) large intestine
46. The vas deferens receives duct from the seminal vesicle and opens into urethra as
(A) epididymis (B) ejaculatory duct
(C) efferent ductule (D) ureter
47. Anthers and filaments form the _____
(A) gynoecium (B) calyx
(C) androecium (D) corolla
48. Which one of the following is not a male accessory gland?
(A) Seminal vesicle (B) Ampulla
(C) Prostate (D) Bulbourethral gland
49. If an endosperm cell of an angiosperm contains 24 chromosomes, the number of chromosomes in each cell of the root will be
(A) 8 (B) 4
(C) 16 (D) 24
50. The portion of embryonal axis between plumule (future shoot) and cotyledons is called
(A) hypocotyl (B) epicotyl
(C) coleorhiza (D) coleoptile
51. The following event(s) occur during photosynthesis
(A) Absorption of light energy by chlorophyll
(B) Conversion of light energy to chemical energy
(C) Reduction of carbon dioxide to carbohydrates
(D) All of the above
52. Oxygen liberated during photosynthesis comes from
(A) water (B) carbon dioxide
(C) chlorophyll (D) glucose
53. At midday, what is happening in the leaf of a plant?
(A) Respiration (B) Photosynthesis
(C) Mainly photosynthesis and some respiration
(D) None of the above
54. Light energy captured by photosynthesis is used in a plant for the synthesis of :
(A) Carbohydrates
(B) Carbohydrates, Fatty acids and Proteins
(C) Fatty Acids and Proteins
(D) None of the above
-

55. In the Calvin cycle, carbon dioxide is fixed in a reaction with the
(A) ribulose biphosphate
(B) ribulose phosphate
(C) ribose tri phosphate
(D) 3-phosphoglyceric acid
56. Full name of NADP is
(A) Nicotinamide dinucleotide phosphate
(B) Nicotine adenine dinuceotide phosphate
(C) Nicotinamide adenine dinucleotide phosphate
(D) None of the above
57. The vein which brings blood from the lungs into the heart is known as
(A) pulmonary vein (B) hepatic vein
(C) superior vena cava (D) pulmonary artery
58. When deoxygenated blood reaches the lungs, the _____ leaves the blood
(A) Oxygen (B) Carbon Dioxide
(C) Nitrogen (D) Phosphorus
59. In which of the following vertebrate group/groups, heart does not pump oxygenated blood to different parts of the body?
(A) Pisces and amphibians
(B) Amphibians and reptiles
(C) Amphibians only
(D) Fishes only
60. The respiratory pigment in human beings is
(A) carotene (B) chlorophyll
(C) haemoglobin (D) mitochondria
61. In a given food chain if the amount of energy at the fourth trophic level is 6 kJ, what will be the energy available at the producer level?
(A) 6000 kJ (B) 20 kJ
(C) 60 kJ (D) 600 kJ
62. A zygote which has an X chromosome inherited from the father will develop into a :
(A) boy
(B) girl
(C) X chromosome does not determine the sex of a child
(D) either boy or girl
63. Exchange of genetic material takes place in :
(A) Vegetative reproduction
(B) Asexual reproduction
(C) Sexual reproduction
(D) Budding
64. Which of these practices can be adopted to save the environment?
(A) refuse the use of single-use plastic bags
(B) reduce the use of paper bags
(C) recycle single-use bags
(D) reuse waste food
65. How will information travel within a neuron?
(A) Dendrite -> cell body -> axon -> nerve ending
(B) Dendrite -> axon -> cell body -> nerve ending
(C) Axon -> dendrite -> cell body -> nerve ending
(D) Axon -> cell body -> dendrite -> nerve ending
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ANSWER KEY

PHYSICS

1. (C) 2. (C) 3. (C) 4. (A) 5. (B) 6. (C)
7. (B) 8. (C) 9. (A) 10. (B) 11. (D) 12. (C)
13. (D) 14. (C) 15. (A) 16. (C) 17. (D) 18. (B)
19. (B) 20. (B)

Chemistry

21. (C) 22. (A) 23. (D) 24. (C) 25. (B) 26. (D)
27. (B) 28. (C) 29. (C) 30. (C) 31. (B) 32. (C)
33. (B) 34. (A) 35. (A) 36. (B) 37. (C) 38. (B)
39. (B) 40. (D)

Biology

41. (B) 42. (D) 43. (A) 44. (C) 45. (C) 46. (B)
47. (C) 48. (B) 49. (C) 50. (B) 51. (D) 52. (A)
53. (C) 54. (B) 55. (A) 56. (C) 57. (A) 58. (B)
59. (D) 60. (C) 61. (A) 62. (B) 63. (C) 64. (A)
65. (A)