



THE H.B.KAPADIA NEW HIGH SCHOOL

ENGLISH MEDIUM

First Preliminary Examination (January -2015)



An ISO 9001 : 2008
Certified Institution

Standard : X

Marks : 100

Subject : Science (11)

Duration : 3 hours (A+B)

PART-A

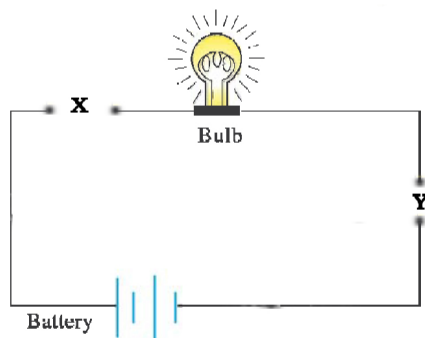
Instructions:

- There are 50 multiple choice questions in this questions paper.
- Each question carries one mark.
- All questions are compulsory.

SECTION-A

1. An object of size 1 cm is placed at a distance of 15cm from a concave mirror of focal length 10 cm. The image distance will be _____
(a) 15 cm (b)-30cm (c)45cm (d)-150 cm
2. An electric heater consumes 1.1 kW power when 220 V voltage is applied to it. How much current will be flowing through it ?
(a) 1.1 A (b) 2.2 A (c)4A (d) 5A
3. If an equilateral triangle has been made from a wire of 18 Ω resistance. The total resistance between the any two vertex of triangle will be.
(a) 2 Ω (b) 6 Ω (c) 4 Ω (d)8 Ω
4. What is taken as cathode in the electrolyte cell while extracting aluminium from alumina ?
(a) Cu clamp (b) Pb linings
(c) Carbon layered Graphite (d) Cu lined carbon
5. Short tubular region after Bowman's capsule is called _____
(a) loop (b) neck (c) proximal tube (d) distal tubule
6. According to right hand thumb rule, whose direction is indicated by a thumb?
(a) electrical current (b) magnetic field
(c) magnetic force (d) motion of conductor
7. The chemical name of slag is _____
(a) Aluminium trioxide (b) Silicon calcium
(c) Calcium Silicate (d) Iron Carbonate
8. What is the dimension of Red blood cell ?
(a) 5100 nm (b) 4000 nm (c) 4900nm (d) 5000 nm
9. For acidic solutions, $[H_3O^+] >$ _____
(a) 10^{-7} M (b) 10^7 M (c) 10^{-1} M (d) 10^{14} M
10. The pH value of lemon juice is _____
(a) 4.0–4.4 (b) 6.3–6.6 (c) 4.5–5.5 (d) 2.2–2.4

11. If an incident ray makes an angle of 25° with the surface of a plane mirror, its angle of reflection will be _____
 (a) 25° (b) 50° (c) 65° (d) 55°
12. Suppose that the radius of curvature R of a spherical mirror is 30 cm. In this case, its focal length(f) will be _____
 (a) 15 cm (b) 20 cm (c) 30 cm (d) 60 cm
13. $\text{---} + 3\text{O}_2 \xrightarrow{\Delta} 2\text{PbO} + 2\text{SO}_2$.
 (a) $(\text{PbS})_2$ (b) 2PbS (c) PbS_2 (d) 2PbS_2
14. Unicellular organisms remove the excretory substances by simple _____
 (a) Osmosis (b) Transpiration (c) Absorption (d) Diffiision
15. Human species have genetic roots in _____
 (a) Africa (b) India (c) America (d) Australia
16. The occurence of difference among individuals of the same species is due to _____
 (a) Variation (b) Transition (c) Development (d) Evolution
17. The first oil well dug was _____ m deep.
 (a) 27 (b) 34 (c) 20 (d) 21
18. Fragmentati on i s seen in _____
 (a) Mucor (b) Planaria (c) Hydra (d) Spirogyra
19. Samarth is working with the circuit shown in the figure. The circuit has two gaps: X and Y. He has wires of five different materials: A, B, C, D and E. He knows that the bulb will light up only when both gaps are filled with conducting materials.



He records his observation in a table. After completing the experiment, ink fell on the paper and he lost entries in row 3.

	Material in X	Material in Y	Bulb (On/Off)
1	A	B	Off
2	A	D	On
3			Off
4	C	E	On

Based on rest of the information and the table, what could be the materials in row 3 ?

- (a) C and D (b) D and E (c) A and C (d) B and C

20. As shown in the figure there are two nichrome wires R_1 having cross section A and length = l R_2 having cross section A and length = $2l$. Select the correct option showing relation between R_1 and R_2



- (a) $R_1 = 2R_2$ (b) $R_1 = 2R_1$ (c) $R_2 = \frac{R_1}{2}$ (d) $R_1 = \frac{R_2}{2}$
21. Menstruation in woman stops when _____
 (a) women gets pregnant
 (b) woman reaches at the age of about 50 years
 (c) Both (a) and (b)
 (d) none
22. Nitric acid having concentration _____ is considered to be concentrated acid.
 (a) 98% (b) 100 % (c) 35-38 % (d) 70-72 %
23. The temperature of superheated water used in Frasch process is
 (a) 430 k (b) 434 k (c) 440k (d) 443 k
24. _____ receives messages from all parts of the body and integrate it.
 (a) Brain (b) Spinal cord
 (c) Vertebral column (d) Both (a) & (b)
25. Boiling point of Ethanoic acid is _____ k.
 (a) 391 (b) 390 (c) 453 (d) none
26. The two cerebral hemispheres are joined together by a band called _____
 (a) Pons (b) Cerebellum
 (c) Medulla oblongata (d) Corpus callosum
27. The movement of curvature of plants in the direction of stimuli is known as _____
 (a) Tropism (b) Thigmonastic response
 (c) Nastism (d) Photonastism
28. _____ on oxidation gives Acetic acid.
 (a) Propanone (b) Propanol (c) Propanal (d) None
29. Nerid is moon of _____
 (a) Pluto (b) Neptune (c) Saturn (d) Uranus
30. Uranus was discovered by _____.
 (a) William Churchill (b) William Harshill
 (c) William Smith (d) William Harshall
31. Oil available from Kalol has _____ % sulphur.
 (a) 0.4 (b) 0.04 (c) 0.03 (d) None of these
32. In a circuit, if 40Ω , 60Ω and 100Ω bulbs are connected in parallel with 230 Volt _____ electric-line, volt is the potential difference between two terminals of each bulb.
 (a) 40 (b) 60 (c) 100 (d) 230
33. 5Ω , 10Ω and 15Ω resistances are connected in parallel with each other. Equivalent

- resistance of the circuit is _____
- (a) Less than 5 Ω (b) More than 15 Ω
(c) More than 30 Ω (d) Equal to 30 Ω
34. Around 40 to 50% depletion in ozone layer occurs in _____ region.
(a) South Polar (b) North Polar (c) Equatorial (d) None
35. In which year Amrita Devi sacrificed her life for protection of Khejri trees ?
(a) 1731 (b) 1763 (c) 1783 (d) 1873
36. The power of accommodation of an eye usually _____
(a) Decrease with age
(b) Increase with age
(c) Decrease with increase in blood pressure
(d) Increase with decrease in blood pressure
37. $NH_4^+_{(aq)} + H_2O_{(l)} \xrightarrow{?} \text{?} + H_3O^+_{(aq)}$
(a) Ionisation, $NH_{3(aq)}$ (b) Hydrolysis, $NH_{4(aq)}$
(c) Hydrolysis, $NH_{3(aq)}$ (d) Ionisation, $NH_{4(aq)}$
38. Which coloured wire is used for earthing ?
(a) Red (b) Black (c) Green (d) Any colour
39. Edaphic factors are included in _____
(a) Abiotic components (b) Biotic components
(c) Producers (d) Consumers
40. $NH_4Cl_{(aq)} \rightarrow NH_4^+_{(aq)} + \text{_____}$
(a) $Cl^+_{(aq)}$ (b) $Cl^-_{(aq)}$ (c) $Cl_2^-_{(aq)}$ (d) $Cl_2^+_{(aq)}$
41. What is the diameter of DNA ?
(a) 4 nm (b) 2.3 nm (c) 3 nm (d) 2 nm
42. What is the diameter of Carbon nanotube ?
(a) 1.5 nm (b) 1.4 nm (c) 1.9 nm (d) 1.3 nm
43. The _____ solution of NH_3 is called liquor ammonia.
(a) diluted (b) aqueous (c) concentrated (d) none
44. How much time is needed for the food to get churned in stomach?
(a) 6 hours (b) 4 hours (c) $2\frac{1}{2}$ hours (d) 3 hours
45. What happens when the guard cells lose water?
(a) They become turgid and the pores close
(b) They become dry and finally die
(c) They draw water from roots through tracheids
(d) They shrink and cause the pore to close

9. Draw labelled diagram of nerve cell.
10. Define: (a) Ecosystem (b) Abiotic component.

SECTION - C

Answer the following in brief (3 marks each)

15

11. Describe the formation of mirage through an appropriate figure.
12. Explain domestic electric circuit with diagram.

OR

12. Explain the construction and working of Electric Bell with a diagram.
13. Write three chemical properties of Ethanol.

OR

13. Explain reduction, oxidation and addition reaction of propanone.
14. Explain excretory system in human beings with diagram.
15. Draw labelled diagram of human brain and explain spinal cord.

SECTION-D

Answer the following in brief (5 marks each)

15

16. Derive Lens Formula with diagram.
17. Explain extraction of iron by blast furnace with a diagram.

OR

17. Explain the method by which bauxite ore is concentrated.
18. Explain nutrition in Amoeba with a diagram.

OR

18. What is Respiration ? Explain the process of respiration in human beings. (Figure not required)

Best of Luck