

BOARD - QUE. PAPER
6
SOLUTION

SOLUTIONS

SCIENCE AND TECHNOLOGY
QUESTION PAPER-6 : JULY-2014

STANDARD-10
JULY
2014
011(E)

Part-A : Time : 1 Hour / Marks : 50

Part-B : Time : 2 Hours / Marks : 50

Time : 1 Hour]

PART-A

[Maximum Marks : 50

Instructions : As per Question Paper-I

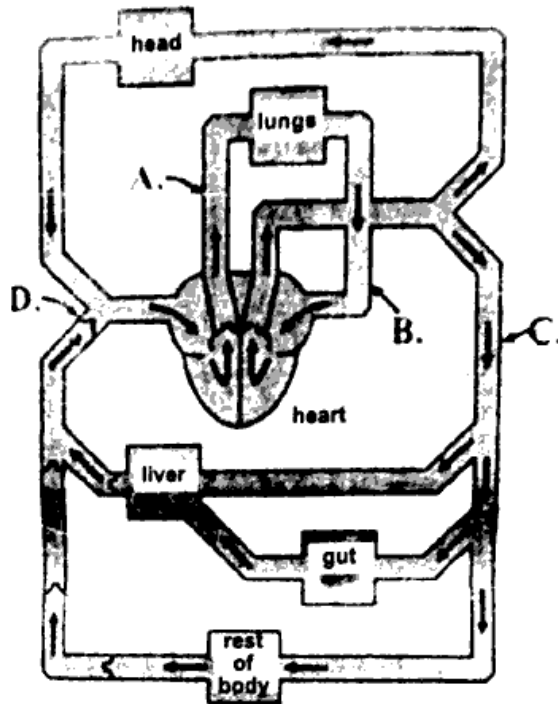
- What is the general formula of alkyne series ?
(A) C_nH_n (B) C_nH_{2n-2} (C) C_nH_{2n+2} (D) C_nH_{2n}
- Which power station in Gujarat uses natural gas as fuel ?
(A) Sardar Sarovar Power Station (B) Dhuvaran Power Station
(C) Ukai Power Station (D) Vanakbori Power Station
- C_3H_8 is the molecular formula of which compound ?
(A) Propyne (B) Propene (C) Methane (D) Propane
- Which of the following is the use of propanone ?
(A) As preservative (C) Antiseptic (C) Antibiotic (D) To remove nail polish
- What is the molecular formula of formalin ?
(A) $HCOOC_2H_5$ (B) $HCOOH$ (C) $HCHO$ (D) $HCOOCH_3$
- Which functional group is there in methyl ethanoate ?
(A) Ester (B) Halide (C) Ketone (D) Alcohol
- Make Pairs.

Section-I	Section-II
(a) Rabbit	(i) Omnivore
(b) Lion	(ii) Carnivore
(c) Cockroach	(iii) Herbivore

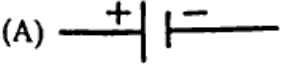



- (A) (a - ii), (b - i), (c - iii)
(C) (a - ii), (b - iii), (c - i)

- (B) (a - i), (b - ii), (c - iii)
(D) (a - iii), (b - ii), (c - i)

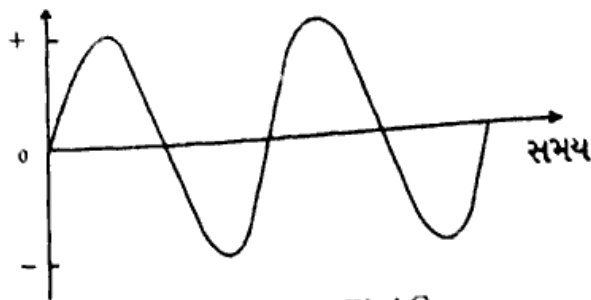
8. In the representation of the circulatory system below, identify the artery that carries deoxygenated blood.



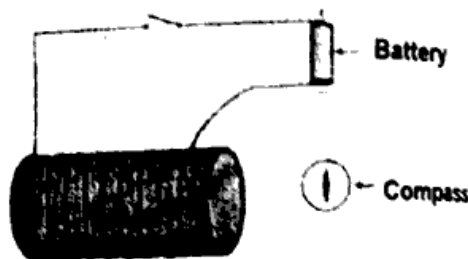
- (A) D (B) B (C) C (D) A
9. During which process blood is filtered out in Bowman's capsule ?
(A) Reabsorption (B) Secretion (C) Ultrafiltration (D) None of them
10. How many Uriniferous tubules does a human kidney possess ?
(A) 10,000 (B) 100 lakh (C) 10 lakh (D) 1 lakh
11. Which of the following structure is responsible for transportation of water in higher plants ?
(A) Companion cell (B) Sieve cell (C) Vessel (D) Sieve tube
12. Which is male sex hormone ?
(A) Progesterone (B) Adrenaline (C) Testosterone (D) Estrogen
13. The plant part which exhibits negative geotropism is :
(A) leaves (B) stem (C) branch (D) root
14. An alga which reproduces by the asexual reproduction method called fragmentation is
(A) Spirogyra (B) Salmonella (C) Plasmodium (D) Rhizopus
15. The cut part of plant stem (having roots and fixed to ground) which is used in the process of grafting is :
(A) Bud (B) Scion (C) Cutting (D) Stock
16. The continuity of features of from one generation to another is known as :
(A) Generation (B) Mutation (C) Heredity (D) Evolution
17. On which of the following plant species mendel has worked :
(A) Phaseolus mungo
(B) Pisum sativum
(C) Cassia tora
(D) Zea mays
18. First Order consumers are :
(A) Omnivores (B) Herbivores (C) Decomposers (D) Carnivores
19. How much depletion of ozone occurs in the stratosphere by CFC (Chloro Fluoro Carbon) ?
(A) 100% (B) 60% (C) 80% (D) 45%

20. Which of the following is the andolan for conservation of forest ?
(A) Nipco andolan (B) Chipko andolan
(C) Sipco andolan (D) Ripco andolan
21. Which one of the following is considered as liquid gold ?
(A) Fuel oil (B) Diesel (C) Petroleum (D) Kerosene
22. Nanotechnology is a science which involves study of matter particles.
(A) Whose all the dimensions are less than 10^{-3}m .
(B) Whose atleast one dimension is between 1 nm and 100 nm.
(C) Which can not be seen with naked eyes.
(D) Whose all dimensions are between 1nm and 100 nm.
23. Thermal conductivity of standard SWNT along its length is _____ $\frac{\text{watt}}{\text{m.k}}$
(A) 35 (B) 35,000 (C) 3500 (D) 385
24. What is the focal length of a convex lens having power +5.0D ?
(A) +20 cm. (B) +10 cm. (C) -20 cm. (D) -10 cm.
25. What is the relation between radius of curvature (R) and the focal length (F) of a spherical mirror ?
(A) $R = 3F$ (B) $R = 2F$ (C) $R = F$ (D) $R = F/2$
26. Optical fibres used in signal communication works on which principle ?
(A) Refraction (B) Dispersion (C) Scattering (D) Total internal reflection
27. In human eye, the image of an object is formed at _____.
(A) Retina (B) Cornea (C) Pupil (D) Iris
28. Meena ben's age is 45 yrs. She cannot see the nearby object clearly, but distant object can be seen clearly. To correct this defect of vision, what type of spectacles she should wear ?
P = Convex lens
Q = Convcave lens
(A) None from P & Q (B) Only P
(C) Both P & Q (D) Only Q
29. Which symbol represents Resistance in a electric circuit ?
(A)  (B) 
(C)  (D) 
30. If five equal pieces of a resistance wire having 5Ω resistance are connected in parallel, then their equivalent resistance will be _____.
(A) 25Ω (B) 5Ω (C) $1/5\Omega$ (D) 1Ω
31. The unit of resistivity of the material is _____.
(A) $\Omega\text{ m}$ (B) m/Ω (C) Ω/m (D) Ω
32. During a discussion on AC electric current in a class room, following views were putforth.
Suresh : AC current can be transmitted over a long distance without much loss of electrical energy.
Mahesh : Production of AC is comparatively easier and cheaper.
Who is right ?

- (A) Both are wrong
 (B) Only Mahesh
 (C) Both Suresh and Mahesh
 (D) Only Suresh
33. Given diagram represents which type of electric current ?



- (A) DC
 (B) AC
 (C) Both AC and DC
 (D) None of the given
34. A coil is wrapped loosely around a cylindrical wooden piece and its ends are connected to a battery as shown. In which case will the compass needle placed near the coil deflect when the circuit is closed ?



- (A) The needle will deflect even with the wooden piece alone.
 (B) Only if the cylindrical wooden piece is replaced by a magnet.
 (C) Only if the cylindrical wooden piece is replaced by a magnet which is moved in and out of the coil.
 (D) Only if the cylindrical wooden piece is replaced by an iron piece.
35. When an electric current is passed through the conducting wire, a magnetic field is produced in a region around it. Name the scientist, who explained this. He was a science teacher at a school in Denmark.
- (A) Ampere (B) Oersted (C) Volta (D) Faraday
36. Statement 1 : It is the fifth planet of the solar system.
 Statement 2 : It is a luminous planet.
 Statement 3 : It is the biggest planet in the solar system.
 Above mentioned statements, predicts the characteristics of which planet ?
- (A) Venus (B) Mercury (C) Jupiter (D) Mars
37. Study the table given below and answer the following question.

Planet	Distance from sun (million kms)	Relative mass of planets (scale : earth is 1.0)
Mars	228	0.11
Jupiter	778	318
Earth	150	1.0
Venus	108	0.86

The light from the sun takes about 8 minutes to reach Earth. How long will it take to reach Mars ?

- (A) It will take the same time, about 8 minutes, as the atmosphere of Mars is thinner than that of Earth.
(B) It will take the same time, about 8 minutes, to reach any place in the solar system.
(C) It will take more than 8 minutes to reach Mars as it is further away from the Sun than Earth.
(D) It will take less than 8 minutes as Earth is bigger than Mars.

38. Phobos and Demos are two moons of _____.

- (A) Saturn (B) Jupiter (C) Venus (D) Mars

39. Our Sun is _____ light years away from the galactic centre.

- (A) 3,000 (B) 300 (C) 30 (D) 30,000

40. Which substance is present in poison of honey bee ?

- (A) Mellitin (B) Pepsin (C) Calcium phosphate (D) Time

41. What is formed by reaction of non-metal oxide with water ?

- (A) Metal (B) Base (C) Salt (D) Acid

42. The outer layer of teeth is made up of which hard substance ? It does not dissolve in water.

- (A) $\text{Ca}_3(\text{PO}_4)_2$ (B) Ca_3PO_4 (C) Ca_3PO_2 (D) CaO

43. Which of the following solutions is most basic ?

- (A) pH = 10.6 (B) pH = 9.3 (C) pH = 11.5 (D) pH = 8.2

44. Which of the following substances is hygroscopic ?

- (A) Slag (B) Feldspar
(C) Anhydrous Calcium Chloride (D) Cryolite

45. In which of the following, displacement reaction is possible ?

- (A) Solution of AgNO_3 + coin of copper (B) Solution of FeSO_4 + coin of silver
(C) Solution of MgCl_2 + coin of aluminium (D) Solution of NaCl + coin of copper

46. Which of the following is an alloy ?

- (A) 24 carat gold (B) Galium (C) 22 carat gold (D) Silver

47. Make the correct pairs from below mentioned 'X' and 'Y'.

'X'	'Y'
(a) Extraction of Sulphur	(1) Contact process
(b) Production of Nitric acid	(2) Frasch method
(c) Production of Sulphuric acid	(3) Haber's process
(d) Production of Ammonia gas	(4) Ostwald's method

- (A) (a - 4), (b - 2), (c - 3), (d - 1) (B) (a - 2), (b - 4), (c - 1), (d - 3)
(C) (a - 3), (b - 2), (c - 4), (d - 1) (D) (a - 4), (b - 3), (c - 2), (d - 1)

48. Which of the following oxides is of neutral nature ?

- (A) N_2O (B) SO_2 (C) P_2O_5 (D) CO_2

49. Which of the following acts as catalyst in production of ammonia by Haber's Process?

- (A) Fe (B) K_2O (C) V_2O_5 (D) Al_2O_3

50. Which type of coal does not produce smoke or odour when burnt ?

- (A) Peat (B) Lignite (C) Bitumen (D) Anthracite