Preliminary Examination: 2018

Date: 31.01.2019 | Std.: 10 | Marks: 100

Day: Thursday | Subject: Science & Technology | Time: 3:00 Hrs.

Part-I:

50Marks

Select the proper option from the given following options.

1. What is the diameter of human's hair?
   (A) 50000 A°
   (B) 500ooo A°
   (C) 20000 A°
   (D) 250000 A°
2. Who spoken these words "There's plenty of room at the Bottom."
   (A) E. O. Lawrence
   (B) K-Eric Drexler
   (C) Richard P. Feynman
   (D) Albert Einstein
3. From which of the following, a parallel beam of light does not remain parallel after reflection?
   (A) Plane Minor
   (B) Concave Mirror
   (C) Convex Mirror
   (D) Irregular reflecting surface
4. The refractive indices of glass, water and ruby are 1.5, 1.33 and I.71 respectively, then- is optically denser than_____.
   (A) Glass, ruby
   (B) water, ruby
   (C) Water; glass
   (D) Ruby, glass
5. Which colour of light are reflected from blue pigment when a while light is incident on it?
   (A) Yellow, Orange, Green
   (B) Violet' Green, Blue
   (C) Violet, Yellow, Green
   (D) Yellow Green, Blue
6. The heat produced in resistance depends upon whom?
   (A) On the electric current Passed
   (B) On resistance
   (C) On time of electric current passes through
   (D) All of these
7. If the current flowing through each turn of a solenoid in a same direction, the magnetic field produced by n turns will be _____ from the magnetic field due to each turn.
   (A) Added
   (B) Subtracted
   (C) Multiplied
   (D) Divided
8. In an electric iron, the electrical energy is converted into _____energy.
   (A) Mechanical
   (B) Heat
   (C) Light
   (D) Chemical

9. The magnitude of induced current due to the relative motion of coil and magnet does not depend on.

(A) Speed of relative motion
(B) Number of turns of coil
(C) Resistively of Wire of Coil
(D) Pole Strength of a magnet

10. Which of the following statement is not suitable with the reference of DC current?

(A) Electric current always flows from positive pole to negative pole.
(B) The value of electric current is always constant with the time.
(C) It production is cheap.
(D) More energy is wasted in its conduction.

11. Pole of Mars is covered by _____.

(A) dry Ice
(B) water ice
(C) Nitrogen
(D) Iron

12. The first ever discovered asteroid is _____

(A) Demos
(B) Sheron
(C) Triton
(D) Ceres

13. _____ is used for launching 1000-2000 kg class of remote sensing satellite.

(A) GSLV
(B) MSLV
(C) PSLV
(D) CSLV

14. In which year the Halley's Comet is going to be seen again.

(A) 2052
(B) 2072
(C) 2062
(D) 2082

15. Basic substance are taken for the remedy of the acidity, these are known as_____.

(A) acid
(B) base
(C) antabase
(D) antacids

16. Who gave the theory of proton transfer?

(A) Lewis
(B) Bronsted-Lowery
(C) Arrhenius
(D) Boyle

17. Which of the following igneous solution has pH less than 7?

(A) NH_4OH
(B) NH_4^+
(C) NH_4Cl
(D) NH_3

18. What is concentration of sulphuric acid available in the market at present?

(A) 35%
(B) 50%
(C) 98%
(D) 72%

27. Which mineral coal contains approximately 78-80% carbon?

(A) Peat
(B) Lignite
(C) Bitumin
(D) Anthracite

28. In Trinidad, when mineral oil after coming out in large amount, the volatile substances were completely evaporated and now-a-days the pond of which substance is left out as residue?

(A) Coal tar
(B) Coke
(C) Mineral oil
(D) tar

29. The mineral oil obtained from Pennsylvania of America is of which type?

(A) Containing paraffin hydrocarbon
(B) Containing naphthalene hydrocarbon
(C) Containing Aerometric compounds
(D) Containing Asphalt.

30. Which hybridization takes place in methane molecule?

(A) Sp^3d
(B) Sp^2
(C) Sp^3
(D) Sp

31. The efficiency of a sample of fuel is equal to that of mixture of 90% isooctane and 10% n-heptanes, then what its octane number is considered ?

(A) 10
(B) 90
(C) 45
(D) 55

32. What is the molecular formula of 2-propanol?

(A) CH_3-OH
(B) CH_3-CH_2-CH_3
(C) CH_3-CH-CH_3
(D) CH_3-CH_2OH

33. Which of the following perform heterotrophic mode of nutrition?

(A) Algae, bryophytes
(B) Bryophytes, Pteridophytes
(C) Gymnosperms, angiosperms
(D) Bacteria, fungus

34. The process of obtaining food in Amoeba is called as_____

(A) Phagocytosis
(B) Pyanocytosis
(C) Cytosis
(D) None of the given

35. How many ATPS are produced during complete oxidation of one glucose molecules?

(A) 6 ATP
(B) 8 ATP
(C) 30 ATP
(D) 38 ATP

36. Find the correct series of associated glands of human digestive system?

(A) Pancreas - liver - salivary glands
(B) Salivary glands - liver - pancreas
(C) Pancreas - Salivary gland - liver
(D) Liver - pancreases - salivary glands

37. The fluid consisting of excretory substance is known as_____

(A) blood
(B) lymph
(C) urine
(D) plasma

38. The membranes surrounding the brain is called as_____

(A) Membranes
(B) Coelomic membrane
(C) Meninges
(D) Nerve membrane

39. Where waste products are stored in the plants?

(A) In food vacuoles
(B) In plans cells
(C) In cytoplasm
(D) IN Vacuole

40. Which of the following are external stimuli?

(A) Movement, bend type
(B) Bend type
(C) Tropism, Nastism
(D) Nastism, Movement

41. In asexual reproduction, two off springs having the same genetic material and the same body features are called.

(A) Callus
(B) Twins
(C) Clones
(D) Chromosomes

42. Name the coiled tube conducting the sperm.

(A) Vas deference
(B) Epididymis
(C) Ureter
(D) Urethra

43. One of the following organisms does not reproduce by binary system.

(A) Amoeba
(B) Plasmodium
(C) Euglena
(D) Paramoecium

44. Which are the first and last tropic levels respectively in the grazing food chain?

(A) producer, decomposers
(B) Herbivores, decomposers
(C) Carnivorous, decomposers
(D) Decomposers, producers

45. Which waste pollutes the fertile soil?

(A) Non-degradable solid waste
(B) Degradable biological
(C) Degradable chemical waste
(D) Degradable gaseous waste

46. On a cross fertilization between plants having TT and tt genes which genotype is developed

(A) TT
(B) Tt
(C) tt
(D) tT

47. How is the transfer of energy in the ecosystem?

(A) Cyclic
(B) Bidirectional
(C) Unidirectional
(D) Tridirectional

48. Which tree has to be planted in the forest cutting area?

(A) Eucalyptus (B) Teak

(C) Pinus (D) All the given

49. What type of energy sources and wind energy, hydral energy & nuclear energy?

(A) Non conventional (B) Renewable energy source

(C) (A) & (B) both (D) none of the given

50. How much Sq. Km. area of Gujarat is covered with forest?

(A) 18889 Sq. Km. (B) 18899 Sq.Km.

(C) 18999 Sq. Km. (D) 19999 Sq. Km.

PART - II: 50 Marks

Section - A

Write the answer of the following questions in brief: (2 marks each) **(10)**

1. Explain: bottom-up and top down.

OR

Give account of electrical properties of carbon nanotube.

2. State Ohm's law, write its equation and give its SI unit.
3. Explain the importance of pH in digestion of food.
4. In F_2 generation 25% plants are dwarf, what does it meant?

OR

Explain the hormones of master gland.

5. Explain the sources of fresh water and describe the importance.

Section - B

Answer in short: (2 marks each) **(10)**

6. What is lens? Explain its main type.
7. Explaining about multistage rocket, mention its advantages and limitations.
8. Write a note about Huber's method for the industrial production of Ammonia gas.
9. Explain the human heart with diagram.
10. Describe the series of processes leading to depletion of ozone layer.

OR

Explain component of ecosystem and describe about consumer.

Section - C

Answer the following question. (3 marks) **(15)**

11. Explain with the help of a simplified sketch the working of important organs of human eye.
12. Explain the oersted's experiment for the magnetic field resulting by a current Carrying straight conducting wire.

OR

Describe the experiment that explains the phenomenon of an electromagnetic Induction & give its conclusion.

13. Explain chemical properties of dilute sulphuric acid.
14. Explain giving chemical equation, the industrial method to prepare ethanol from sugar.

OR

Write in detail classification of polymers.

15. Describe in detail, male reproductive system with diagram'

Section - D

Answer the following question in detail. (5 marks) **(15)**

16. Obtain Mirror formula for spherical lens.
17. Explain chemical properties of metals with equations.

OR

Give brief information about Metallurgy.

18. Describe male reproductive system with diagram in details.

OR

Describe female reproduction system with diagram in detail.