

## ENTRANCE QUESTION FOR GRADE -11(SET-1)

### PHYSICS

- Which one of the following is a derived units?  
A) Candela b) Ampere c) Hertz d) Mole
- The unit of power (watt) expressed in terms of fundamental units is  
a)  $\text{kg m}^2\text{s}^{-3}$                       b)  $\text{kg m}^2 \text{s}^{-2}$   
c)  $\text{kg m}^2\text{s}^{-1}$                       d)  $\text{kg ms}^{-3}$
- Which formula of following is the VR of the Wheel and Axle?  
a)  $E_d/h_d$  b)  $l/h$  c)  $R/r$  d)  $r/R$
- Which of the following is not affected by friction ?  
a) VR b) Work done by effort c) MA d) efficiency
- Roshan and Rohan both are carrying same load for same Distance. Roshan takes 40 minutes whereas Rohan takes Only 20 minutes. Which of the statement is correct ?  
a) Work done and power is same for both.  
b) Work done is same but power is different.  
c) Word done is different but power is same  
d) Work done and power is different for both.
- If mass of a body remains constant but its velocity is Increased by 3 times, by how many times its kinetic Energy increases.  
a) 3 times b) 6 times c) 9 times d) 12 times.
- Which of the following is required to make music Melodious.  
a) reverberation b) echo  
c) refraction d) detracton
- Which of the following statement is false ?  
a) Intensity is directly proportional to the square of the amplitude.  
b) Intensity is inversely proportional to the density of the medium.  
c) Intensity at a point varies inversely as the square of its distance from the source.  
d) Reflector of sound amplifies the intensity.
- A person can lift a mass of 100 kg on the surface of the Earth. Mass he/she can lift on the surface of the Jupiter is  
a) 600 kg                                      b)  $\frac{50}{3}$  kg  
c) 2500 kg                                      d) 4 kg
- When an object is thrown vertically upward, on reaching the highest point, the value of acceleration due to gravity will be  
a)  $4.9 \text{ m/s}^2$                                       b)  $9.8 \text{ m/s}^2$  upwards  
c)  $9.8 \text{ m/s}^2$  towards the ground d)  $0 \text{ m/s}^2$
- The apparent weight of the floating body is  
a) 0 N  
b) equal to real weight of the body  
c) greater than the real weight of the body  
d) lesser than the real weight of the body
- The formula showing relation among cross sectional area and efforts is given by:  
a)  $\frac{A_1}{F_1} = \frac{A_2}{F_2}$                                       b)  $A_1 \times A_2 = F_1 \times F_2$   
c)  $\frac{A_1}{A_2} = \frac{F_2}{F_1}$                                       c)  $A_1 \times F_1 = A_2 \times F_2$
- In a hydroelectric power plant more electrical power can be generated if water falls from a greater hight because:

- a) Its temperature increases
  - b) larger amount of potential energy is converted into kinetic energy.
  - c) The electricity content of water increases with height.
  - d) more water molecules dissociate into ions.
14. The disposal of wastes produced in a nuclear power Plant is a big problem because it is :
- a) highly radioactive
  - b) highly inflammable
  - c) extremely foul smelling
  - d) too heavy
15. Heat capacity depends on
- a) Change in temperature.
  - b) Mass of body
  - c) Nature of substance
  - d) all of the above
16. At night a current of air blows from the colder land to the warmer sea is called as:
- a) Air breezes
  - b) Sea breezes
  - c) Land breeze
  - d) None of the above
17. A convex lens forms a virtual magnified image when the Object is kept.
- a) at 2F
  - b) between F and 2F
  - c) at infinity
  - d) between optical centre and F
18. If the power of lens is - 2D , its focal length is
- a) -2m
  - b) 0.5m
  - c) -0.55cm
  - d) -0.5m
19. Which formula is used to calculate power in electricity?

a)  $P = W \times t$       b)  $P = \frac{V}{I}$   
 c)  $P = V \times I$       d)  $P = \frac{t}{W}$

20. Which instrument among the following changes Alternating current into direct current and direct current into alternating current?
- a) Transformer
  - b) Dynamo
  - c) Inverter
  - d) Adaptor

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## CHEMISTRY

- The noble gases like Ne, Ar, etc are
  - diatomic
  - monoatomic
  - metallic
  - reactive
- Water is
  - polar compound
  - non polar compound
  - ionic compound
  - none of the above
- Which character of the following is found in a suspension only, not in a solution and a colloid ?
  - homogeneous mixture
  - particles are visible
  - particles cannot pass through filter paper
  - particles move here and there in the mixture.
- What is the solubility of salt at 60° C, if 2 g of salt remains as a residue when 7g of saturated solution prepared at 60° C is dried ?
  - 40 at 60° C
  - 20 at 60° C
  - 80 at 60° C
  - 50 at 60° C
- Permanent hardness of water is caused due to the presence of dissolves
  - calcium hydrogen carbonates
  - magnesium hydrogen carbonates
  - carbonate of magnesium
  - sulphates of magnesium
- Which of the following statement true regarding the electronegativity of atoms in water molecule?
  - Hydrogen is more electronegative than oxygen.
  - Hydrogen is less electronegative than oxygen.
  - Electronegativity of hydrogen and oxygen is same.
  - oxygen and hydrogen do not have significant electronegativity in water.
- Which of the following is called a nitrogen fertilizer ?
  - potassium carbonate
  - potassium chloride
  - calcium super phosphate
  - ammonium phosphate
- Which of the following chemical fertilizer is not the source of phosphorous ?
  - ammonium hydrogen phosphate
  - urea
  - calcium super phosphate
  - ammonium phosphate
- $\text{CaCO}_3 \xrightarrow{\quad \blacktriangle \quad} \text{CaO} + \text{CO}_2\uparrow$  represents
  - combination reaction
  - single displacement reaction
  - exothermic reaction
  - endothermic reaction
- The exchange of ions or radicals between two compounds takes place in which reaction ?
  - combination
  - double displacement
  - addition
  - neutralization
- Plaster of paris is a salt of \_\_\_\_\_ ?
  - calcium
  - copper
  - sodium
  - potassium
- Acidic stomach can be relieved by taking antacid in the form of
  - calcium hydroxide
  - sodium hydroxide
  - potassium hydroxide
  - magnesium hydroxide
- What is the molecular formula of urea ?
  - $\text{NH}_2\text{CONH}_2$
  - $\text{CH}_3\text{OCH}_3$
  - $\text{NH}_2\text{CONH}_4$
  - $\text{NH}_4\text{CONH}_4$

14. The aqueous solution of gas that turns red litmus Paper to blue is  
a)  $\text{CO}_2$  b)  $\text{H}_2$  c)  $\text{NH}_3$  d)  $\text{N}_2$
15. What is the specific gravity of aluminium ?  
a) 10.27 b) 2.7 c) 7.86 d) 8.95
16. Which of the following metal is a P-black element ?  
a) Gold b) Iron c) Copper d) Aluminium
17. Isomers always have the same  
a) melting point b) molecular formula  
c) boiling point d) reactivity
18. What is the molecular formula of glycerol ?  
a)  $\text{C}_2\text{H}_5\text{OH}$  b)  $\text{C}_3\text{H}_5(\text{OH})_3$   
c)  $\text{C}_5\text{H}_{10}$  d)  $\text{C}_2\text{H}_4(\text{OH})_2$
19. Which one of the following glasses is called sodalime glass ?  
a) water glass b) hard glass  
c) flint glass d) ordinary glass
20. Which is thermoplastic ?  
a) PVC b) Teflon  
c) bakelite d) melamine

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## BIOLOGY

- Which of the following is called a vascular non flowering plant?
  - Marchantia
  - Fern
  - Cycas
  - Spirogyra
- Which of the following groups of plants always depend upon wind for pollination?
  - bryophytes
  - Pteridophytes
  - angiosperm
  - Gymnosperm
- Who is known as the father of taxonomy.
  - R.H Whittaker
  - Carl woese
  - E.Haeckel
  - C.linnaeus
- The locomotory organ of earthworm is
  - Setae
  - Pseudopodia
  - tentacles
  - Jointed legs
- Which mosquito transfers plasmodium?
  - Encheria
  - Culex
  - Anopheles
  - Aedes
- The organs of different organisms having the same anatomy but different morphology is
  - Homologous organs
  - analogous organs
  - Vestigial organs
  - none of them
- The nerve responsible for smell is
  - optic nerve
  - olfactory nerve
  - auditory nerve
  - touch releptors
- In which part of the kidney are Bowman's Capsule found?
  - Pelvis
  - Medulla
  - Cortex
  - Calye
- How many bones from the skull?
  - 12
  - 14
  - 8
  - 10
- Which of the following is responsible for height of plants?
  - Meristematic tissue
  - Simple permanent tissue
  - Complex permanent tissue
  - special permanent tissue
- Who is known as the father of biology?
  - Aristotle
  - Mendel
  - Darwin
  - Haeckel
- The plants found in desert is called
  - Xeric
  - hydrophytes
  - Xerophytes
  - aquatic
- Which stage of the life cycle of mosquito is more active in comparison to others insect
  - Pupa
  - Larva
  - egg
  - adult
- Which group of following has a pair of Pinnae?
  - Mammals
  - chordates
  - vertebrates
  - invertebrate
- Which of the following produces milk like liquid in plants?
  - Glandular tissue
  - Aerenchyma

c. Chlorenchy                      d. Lactiferous

16. Which of the following bone is found in forelimbs?

- a. tibia                                  b. ulna
- c. fibula                                d. tarsals

17. The unit of kidney is called as

- a. Bowman's capsule      b. nephron
- c. neuron                              d. Cortex

18. Which part of the eye controls the pupil?

- a. Ciliary muscle              b. Vitreous humor
- c. Iris                                    d. lens

19. The wings of insect and those of birds are example of

- a. homologous organs      b. analogous organs
- c. vestigial organ              d. none of above

20. How many time the moulting takes place in Silkmoth.

- a. 3                                        b. 4
- c. 5                                        d. 6

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## ENGLISH

A. Choose the correct alternative from the given options below:

1. What is the meaning of the phrase 'oily tongue'?

- i. Flattery
- ii. Hungry person
- iii. Strong critic
- iv. Rich food

2. You haven't had your lunch, .....you?

- i. are
- ii. aren't
- iii. have
- iv. haven't

3. This is a character from which play by William Shakespeare? 'ADRIANA'?

- i. Winter's Tale
- ii. Taming of the Shrew
- iii. Comedy of Errors
- iv. Othello

4. What does the word 'epitome' mean?

- i. dull, uninteresting ,tiresome
- ii. unfeeling, crude
- iii. a summary, model
- iv. Incapable of being changed, irreversible

5. 'Even if it rains I shall come' means.....

- i. If I come it will not rain,
- ii. If it rains I shall not come
- iii. I will certainly come whether it rains or not
- iv. Whenever there is rain I shall come

6. Who is the author of this famous poem

" I Wandered Lonely as a Cloud"?

- i. THOMAS HOOD
- ii. WILLIAM SHAKESPEARE
- iii. WILLIAM WORDSWORTH

iv. ROBERT FROST

7. The water hasn't brought to the office..... I've been here for an hour already.

- i. till
- ii. up
- iii. yet
- iv. still

8. Success in the examination depends ..... hard work alone.

- i. at
- ii. on
- iii. for
- iv. over

9. ' Eagles end up eating entrails' is the example of.....(Figure of speech)

- i. Puns
- ii. Simile
- iii. Metaphor
- iv. Alliteration

10. Match the following figure of speech in column 'A' with their example in column 'B'.

A

- i. simile
- ii. personification
- iii. alliteration
- iv. metaphor

B

- a. The hyena laughed
- b. His words are wisdom
- c. He eats like a bird
- d. Carly cooked a casserole

- i. 1-b
- ii. 1-d
- iii. 1- c
- iv. 1- c
- 2-c
- 2 -c
- 2- d
- 2- a
- 3-a
- 3- a
- 3- a
- 3- d
- 4-d
- 4-b
- 4- b
- 4- b

11. She let her horse..... in the field.

- i. loosen
- ii. Loose
- iii. loosely
- iv. Lose

12. Some people regard the world as.....

- i. imitation
- ii. Allusion
- iii. Illusion
- iv. Elision

13. A speech delivered without previous preparation is called.....

- i. debate speech
- ii. informative speech
- iii. extempore speech
- iv. motivational speech

14. They laughed a lot last night.

The film .....very funny.

- i. should have been
- ii. Must have been
- iii. Was to be
- iv. Should be

15. Let's go to the theatre,.....?

- i. don't we
- ii. Let us
- iii. shall we
- iv. Will we

16. If.....you were coming, I would have baked a cake.

- i. I would know
- ii. I would have know
- iii. I had known
- iv. I had had known

17. My friend said to me, "Has your father returned from Calcutta?"

- i. My friend enquired me if his father had returned from Calcutta.
- ii. My friend asked me if my father had returned from Calcutta.
- iii. My friend said to me that my father has returned from Calcutta.
- iv. My friend told me that his father had returned

from Calcutta

18. Certain serious diseases can be successfully treated .....detected in an early stage.

- i. unless
- ii. If
- iii. Even when
- iv. Before

19. If I ..... the choice of making either an oral or a written report , I.....the second alternative.

- i. gave/could pick
- ii. were given/would pick
- iii. would have given/had picked
- iv. had been given/might pick

20. He said to her, "Are you coming to the party?"

- i. He told her if she was coming to the party.
- ii. He asked her if she was coming to the party.
- iii. He asked her if she will be coming to the party.
- iv. He asked her whether she is coming to the party.

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## MATHS

1. What acute value of  $\theta$  satisfies the trigonometric Equation  $\tan \theta - \sqrt{3} = 0$

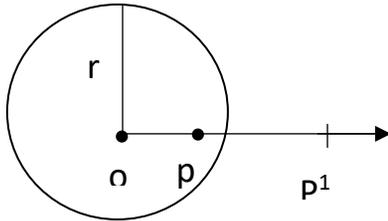
- i)  $30^\circ$     ii)  $45^\circ$     iii)  $60^\circ$     iv)  $90^\circ$

2. If  $f(x+2) = 2x+3$  then find  $f^{-1}(4)$

- i)  $\frac{5}{4}$     ii)  $\frac{4}{3}$     iii) 7    iv)  $\frac{5}{2}$

3. If the radius of the adjoining inversion circle is 8cm Then find  $OP \times OP'$

- i)  $2\sqrt{2}$   
ii) 32  
iii) 64  
iv) 8



4. If  $\left| \frac{x}{3} - 2 \right| = 0$ , find the value of  $x$

- i) 3    ii) 2    iii) 0    iv) -6

5. Find the coordinates of vertex of parabola of  $y = x^2 - 4x + 3$

- i) (3, -2)    ii) (2, -1)    iii) (4, -1)    iv) (-1, -2)

6. For what values of K, the given vector is a unit vector,

$$AB = \begin{pmatrix} k \\ 0.6 \end{pmatrix}$$

- i)  $\pm 0.6$     ii)  $\pm 0.7$     iii)  $\pm 0.8$     iv)  $\pm 0.9$

7. If the given data is in ascending order and the 4<sup>th</sup> decile

is 60, find the value of  $x$ . 30, 40, 50,  $\frac{3x+9}{2}$ , 70, 80, 90, 100, 110

- i) 73    ii) 37    iii) 47    iv) 74

8. In a data, the quartile deviation and its coefficient are

15 and  $\frac{3}{7}$  respectively. Find the first quartile.

- i) 50    ii) 20    iii) 30    iv) 40

9. If (K, 4K - 5) lies in the function  $f(x) = 2x + 1$ , find the Value of K.

- i) 3    ii) 4    iii) 5    iv) 2

10. Find the image of a point A (7,9) under reflection in The line  $x = 2$

- i) (-5, 4)    ii) (-3, 5)    iii) (4, -5)    iv) (5, -3)

11. If 3 is subtracted from the square of a number and the result is 6. Find the number.

- i)  $\pm 3$     ii)  $\pm 4$     iii)  $\pm 5$     iv)  $\pm 2$

12. If  $\bar{X} = 50$  and  $\sum fx = 750$ , find the number of terms (N)

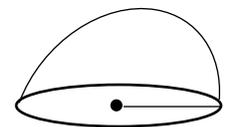
- i) 20    ii) 15    iii) 25    iv) 10

13. What is the probability of getting a jack ace from a well shuffled pack of 52 cards?

- i)  $\frac{3}{13}$     ii)  $\frac{4}{13}$     iii)  $\frac{2}{13}$     iv)  $\frac{1}{13}$

14. Find TSA of the adjoining solid hemisphere.

- i)  $8481 \text{ cm}^2$     ii)  $4881 \text{ cm}^2$   
iii)  $1848 \text{ cm}^2$     iv)  $8814 \text{ cm}^2$



$r=14 \text{ cm}$

15. In how many years will the population of a town be 209475 from 190000 at the growth rate of 5% per annum?

- a) 2 yrs    b) 3 yrs    c) 4 yrs    d) 5 yrs

16. The sum of the digits of a two-digit number is 7. If 27 is subtracted from the number, the digits in the number are reversed. Find the number

- a) 82      b) 25      c) 52      d) 28

17. If a sum becomes Rs 13310 in 3 years and Rs 14641 in 4 years interest being compounded annually, find the sum and the rate of interest.

- a) 10%      b) 11%      c) 15%      d) 13%

18. Solve :  $\frac{5x-9}{\sqrt{5x+3}} = 2$

- a) 2      b) 3      c) 4      d) 5

19. Find the gain or loss percent if 12 bags are sold at the cost price of 15 bags.

- a) loss 15%      b) profit 15%  
c) loss 25%      d) profit 25%

20. The mean of 4 different numbers is 6 and the mean of 5 different numbers is 8. Find the mean of 9 numbers?

- a)  $\frac{47}{9}$       b)  $\frac{46}{9}$       c)  $\frac{64}{9}$       d)  $\frac{74}{9}$

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## ENTRANCE QUESTION FOR STANDARD-11 (SET -2)

### PHYSICS

1. A goal keeper in a game of football pulls his hands backwards after holding the ball shot at the goal. This enables the goal keeper to:
  - a) Exert large force on the ball
  - b) Increase the force exerted by the ball on hands
  - c) Increase the rate of change of momentum.
  - d) Decrease the rate of change of momentum.
2. An object of mass 2 kg is sliding with a constant Velocity of 4 m/s on a frictionless horizontal table. The force required to keep the object moving with the same velocity is :
  - a) 32N
  - b) 0 N
  - c) 2N
  - d) 8N
3. If a machine has a mechanical advantage less than one, which of the following must be true ?
  - a) effort is less than the load
  - b) effort distance is greater than the load distance
  - c) effort distance is less than the load distance
  - d) effort and load are the same
4. Brooke applies a force of 50N for 10m to lift a 40N weight 10m high with a pulley. How efficient is the pulley?
  - a) 120%
  - b) 1%
  - c) 80%
  - d) none of the above.
5. The refractive index of water is 1.33. The speed of light in water will be
  - a)  $1.33 \times 10^8$  m/s
  - b)  $3 \times 10^8$  m/s
  - c)  $2.26 \times 10^8$  m/s
  - d)  $2.66 \times 10^8$  m/s
6. You are given three media A, B and C of refractive index 1.33, 1.65 and 1.46. The medium in which the light will travel fastest is
  - a) A
  - b) B
  - c) C
  - d) equal in all three media.
7. If you increase the resistance in a series circuit,
  - a) the current will also increase
  - b) the current will decrease
  - c) the voltage will increase
  - d) the voltage will decrease
8. Where on the earth surface is the value of the angle of dip  $0^\circ$  ?
  - a) geographical N
  - b) N pole of the earth's magnet
  - c) geographical S
  - d) equator
9. The gravitational force between two objects is F. If masses of both the objects are halved without altering the distance between them, then the gravitational force would become
  - a) F/4
  - b) F/2
  - c) F
  - d) 2F
10. What is gravitational force between two objects?
  - a) Attractive at large distances only
  - b) Attractive at small distances only
  - c) Attractive at all distances
  - d) Attractive at large distances but repulsive at small distances.

11. The pressure at the bottom of a filled glass of water is P. The water is taken out and the glass is filled with Kerosene oil (density=  $817.5 \text{ kg/m}^3$ ). Now the pressure at the bottom will be
- same as P
  - smaller than P
  - larger than P
  - cannot be determined
12. A boat is 8m broad and 40 metres long, floats on water. If 125000N of cargo is added , it will sink
- 10cm
  - 4cm
  - 15cm
  - 20cm
13. Which of the following leads to least environmental Pollution in the process of its harnessing and utilization ?
- Nuclear energy
  - Thermal energy
  - Solar energy
  - Geothermal energy
14. Dead organisms are transformed into petroleum and natural gas in
- Presence of air
  - absence of air
  - Presence of sunlight
  - none of the above
15. Increase in temperature of the body is proportional to
- amount of heat absorbed
  - amount of heat evolved
  - density of substance
  - average kinetic energy
16. A container has 2.4 litres of water at  $20^\circ\text{C}$ . The heat required to boil the water is
- 1500 KJ
  - 1258 KJ
  - 1344 KJ
  - 698 KJ
17. The black opening between the aqueous humour and the lens is called
- Retina
  - iris
  - Cornea
  - pupil
18. Myopia and hypermetropia can be corrected by
- concave and plano-convex lens
  - concave and convex lens
  - convex and concave lens
  - plano- concave lens for both defects
19. A current carrying conductor is held in exactly vertical direction. In order to produce a clockwise magnetic field around the conductor, the current should be passed in the conductor:
- From top to bottom
  - From left to right
  - From bottom to top
  - From right to left
20. An induced emf produced when a magnet is moved into a coil. The magnitude of induced emf does not depend on :
- The speed with which the magnet is moved
  - The number of turns of the coil
  - The resistivity of the wire of the coil
  - The strength of the magnet

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## CHEMISTRY

- A chemical reaction does not involve:
  - formation of new substances having entirely different properties than that of the reactants.
  - breaking of old chemical bonds and formation of new chemical bonds.
  - Rearrangement of the atoms of reactants to form new products
  - Changing of the atoms of an element into those of another element to form new products.
- One of the following processes does not involve a Chemical reaction. That is :
  - Melting of candle wax when heated
  - Burning of candle wax when heated
  - Digestion of food in our stomach
  - Ripening of banana
- Dry hydrogen gas on passing over heated oxides of iron, It yields metallic iron. This is described by the process Called
  - Reduction
  - oxidation
  - precipitation
  - hydrogenation
- Name the gas formed when few drop of water are added In magnesium nitride
  - Hydrogen
  - Nitrogen
  - Oxygen
  - Ammonia
- Which metal is found in human blood?
  - Fe
  - Cr
  - Mg
  - Co
- All the matter given shows the property of malleability except
  - Iron
  - graphite
  - aluminium
  - silver
- Which statement is correct to explain why element carbon forms many compounds ?
  - Carbon atom forms ionic bonds with other carbon atoms.
  - Carbon readily forms covalent bonds with other Carbon atoms.
  - Carbon atoms are electronegative
  - Carbon atoms combine readily with oxygen atoms
- The specific gravity of graphite is
  - 3.5
  - 2.2
  - 5.3
  - 2.3
- The orbital configuration of calcium is
  - $1S^2, 2S^2, 2P^6, 3S^2, 3P^6, 4S^2$
  - $1S^2, 2S^2, 2P^6, 3S^2, 3P^6, 3d^2$
  - $1S^2, 2S^2, 2P^6, 4S^2, 3P^6, 3d^2$
  - $1S^2, 2S^2, 2P^6, 3S^2, 3P^5, 4S^3$
- Which one of the given elements is the least reactive?
  - fluorine
  - chlorine
  - iodine
  - bromine
- Which of the following are exothermic processes ?
  - reaction of water with quick lime
  - dilution of an acid
  - evaporation of water
  - sublimation of camphor ( crystals)
  - (i) and (ii)
  - (ii) and (iii)
  - (i) and (iv)
  - (ii) and (iv)
- $Pb + CuCl_2 \longrightarrow PbCl_2 + Cu$

The above reaction is an example of :

- a) Combination  
b) Double displacement  
c) Decomposition  
d) Displacement
13. Which of the following is not an acidic salt ?  
a)  $\text{Ca}_3(\text{PO}_4)_2$                       b)  $\text{CaCO}_3$   
c)  $\text{CaCl}_2$                               d)  $\text{CaSO}_4$
14. Methyl orange is  
a) red in acidic medium, yellow in basic medium  
b) yellow in acidic medium, red in basic medium  
c) colourless in acidic medium, red in basic medium  
d) red in acidic medium, colourless in basic medium
15. Which is the main ore of copper ?  
a) malachite                      b) copper pyrite  
c) cuprite                         d) chalcocite
16. What is the valency of iron ?  
a) 1 and 2                      b) 2 and 4  
c) 2 and 3                      d) 1 and 3
17. Which of the statement is false about homologous series ?  
i) All the member of same series can be represented by same general formula  
ii) The molecular weight of the members in a series is in descending order.  
iii) All members of the series shows similar chemical properties.  
iv) Each successive member of a homologous series differ by :  $-\text{CH}_4$
- a) (i) and (ii)                      b) (ii) and (iii)  
c) (ii) and (iv)                      d) (i) and (iv)

18. Example of unsaturated hydrocarbon is :  
a)  $\text{C}_3\text{H}_8$     b)  $\text{C}_3\text{H}_6$     c)  $\text{C}_4\text{H}_{10}$     d)  $\text{C}_3\text{H}_5(\text{OH})_3$

19. Which is the water glass ?

- a)  $\text{Na}_2\text{SiO}_3 \cdot \text{CaSiO}_3$   
b)  $\text{Na}_2\text{SiO}_3$   
c)  $\text{PbSiO}_3 \cdot \text{K}_2\text{SiO}_3$   
d)  $\text{Na}_2\text{SiO}_3 \cdot \text{CaSiO}_3 \cdot \text{B}_2(\text{SiO}_3)$

20. Which metal oxide is used to impart green colour to glass ?

- a) cobalt oxide                      b) tin oxide  
c) chromium oxide                      d) manganese oxide

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## BIOLOGY

- What is the function of pupil.
  - Controls eye pressure
  - Regulates passage of light in eye
  - work as Screen
  - Focusing of lens
- The process of gradual and orderly change in an organism is
  - mutation
  - Evolution
  - variation
  - Fossil
- The long neck of giraffe is because of variation found in them. It was given by
  - Lamark
  - De Vries
  - Darwin
  - Mendel
- How many bones are present in Hind limbs.
  - 40
  - 50
  - 60
  - 70
- The result of cross in  $F_2$  generation between pure tall and pure dwarf will be
  - 1:3
  - 2:1
  - 3:1
  - 2:1
- Which part of the tongue has the taste bud for bitter/hotter taste?
  - Side
  - Center
  - Tip
  - Back
- Which tissue of the following is responsible for transporting prepared food in different parts of plant?
  - Xylem
  - Phloem
  - Meristem
  - Special permanent tissue
- Which type of animal have thick skin and long eye lashes?
  - Aquatic
  - Xeric
  - Cursorial
  - aerial
- How many times does the larva of mosquito moults?
  - 2
  - 3
  - 1
  - 4
- Which phylum has elongated, cylindrical, unsegmented unisexual animals?
  - annelida
  - arthropoda
  - porifera
  - Nemathelminthes
- Fruit is absent in?
  - mango
  - pine
  - Sunflower
  - rose
- Study of fungi is called
  - Sporology
  - mycology
  - fungiology
  - Hyphology
- Klinefilter syndrome occurs in
  - male
  - female
  - Both
  - None
- Absorption of digested food takes place in
  - small intestine
  - large intestine
  - duodenum
  - food pipe
- The example of vestigial organ is
  - ear
  - appendix
  - kidney
  - adrenal gland

16. Which part of brain controls body posture?
- a. cerebrum
  - b. cerebellum
  - c. pons
  - d. medulla
17. The organism having both male and female sex organs are called.
- a. monoceous
  - b. dioecious
  - c. sessile
  - d. unisexual
18. Which nerve is responsible for sense of hearing?
- a. optic
  - b. auditory
  - c. olfactory
  - d. Touch receptor
19. Who is the most hive working bees in the five
- a. worker
  - b. drone
  - c. larva
  - d. queen
20. How many types of Silk moth are reared in Nepal .
- a. 2
  - b. 3
  - c. 4
  - d. 5

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## ENGLISH

B. Choose the best alternative from the given options below:

1. I am crazy about reading..... history books.

- i. a      ii. an      iii. the      iv. nothing

2. Match the following words in column 'A' with their meaning in column 'B.'

column A

column B

1. Terr

a. To break

2. Fract

b. Fault, blame

3. Flect

c. Land

4. Culpa

d. To bend

i. 1-d      ii. 1-c      iii. 1-c      iv. 1-d

2-a      2-d      2-a      2-b

3-c      3-b      3-d      3-a

4-b      4-a      4-b      4-c

3. How many consonant sounds are there in English?

- i. 20      ii. 12      iii. 26      iv. 24

4. What I .....is that we ..... to think seriously about a thorough reform in the legal system.

- i. had proposed/were beginning  
ii. am proposing/begin

iii. proposed/had begun

iv. was proposing/have begun

5. The lawyer decided to call ..... of the witnesses only and paid no attention to.....

- i. both/others  
ii. the two/any other  
iii. two/the others  
iv. some/another

6. What kind of figure of speech is a direct comparison of two unlike things without using 'like' and 'as'?

- i. simile  
ii. metaphor  
iii. paradox  
iv. personification

7. What is intonation?

- i. Syllables and Stress  
ii. The beat of language  
iii. The individual sound of a language  
iv. The melody of a language

8. How many syllables are there in the word 'Dotted'?

- i. 1      ii. 2      iii. 3      iv. 4

9. "Nick needed new notebook" is the example of \_\_\_\_\_

- i. alliteration                      ii. metaphor  
 iii. irony                              iv. hyperbole
10. Who is the author of the poem "Past and Present?"  
 i. Robert Frost  
 ii. William Shakespeare  
 iii. Thomas Hood  
 iv. Tom Wayman
11. A sentence that is used to give someone an order or a command is an imperative sentence.  
 i. assertive  
 ii. interrogative  
 iii. imperative  
 iv. exclamatory
12. Select the sentence which is grammatically wrong among the given sentences.  
 i. Either of them has done it.  
 ii. Neither he nor I was there.  
 iii. Many a glorious deeds were done.  
 iv. Everyone of the boys loves to ride.
13. She'd rather remain alone \_\_\_\_\_?  
 i. hadn't she  
 ii. had she  
 iii. would she  
 iv. wouldn't she
14. What is the meaning of the phrase "Black Sheep".  
 i. a costly item  
 ii. a dark shiny item  
 iii. an unworthy person in a family or group  
 iv. a funny man
15. Which one is grammatically correct sentences among these sentences?  
 i. The proceeds of the charity show are for riot victims.  
 ii. He asked Robert and I to go.  
 iii. Either Albert or his friends has done it.  
 iv. Two-thirds of the book are interesting.
16. When I saw him in the morning he looked like 'a duck in a thunderstorm'...means  
 i. entrapped                              ii. indomitable  
 ii. distressed                              iv. peaceful
17. Why do you tell a lie? Passive voice of this sentence is.....?  
 i. Why a lie told by you?  
 ii. Why is a lie be told by you?  
 iii. Why is a lie told by you?

iv. Why is a lie being told you?

18. How do we write the following in direct speech?

'Kelly said I am feeling sick today'

- i. Kelly said "I am feeling sick today."
- ii. Kelly said, "I am feeling sick today."
- iii. Kelly said, "I am feeling sick today".
- iv. Kelly said, "I am feeling sick today?"

19. They..... on time if they hadn't missed the train.

- i. may arrive
- ii. might arrive
- iii. might have arrived
- iv. arrived

20. Which of these is not important in English grammar?

- i. Syntax      ii. Structure
- iii. Concord    iv. Emotion

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## MATHS

1. Find the obtuse angle between the lines represented by

$$6x^2 - xy - y^2 = 0$$

- a)  $120^\circ$     b)  $135^\circ$     c)  $180^\circ$     d)  $150^\circ$

2. Without using calculator or a table, find the value of

$$\sin 75^\circ$$

- a)  $\frac{1}{4}$     b)  $\frac{2+\sqrt{2}}{3}$     c)  $\frac{\sqrt{3}+1}{2\sqrt{2}}$     d)  $\frac{\sqrt{3}+\sqrt{2}}{2}$

3. Calculate the length of radius of the circle

$$X^2 + y^2 + 4x - 6y + 4 = 0$$

- a) 2 units    b) 5 units    c) 4 units    d) 3 units

4. If  $\vec{OA} = \begin{pmatrix} \sqrt{3} \\ 7 \end{pmatrix}$  and  $\vec{OB} = \begin{pmatrix} \sqrt{3} \\ 3\sqrt{3} \end{pmatrix}$ , calculate the angle AOB

- a)  $62^\circ$     b)  $54^\circ$     c)  $56^\circ$     d)  $58^\circ$

5. If  $\vec{a} \cdot \vec{b} = 0$ , write the angle between  $\vec{a}$  and  $\vec{b}$

- a)  $90^\circ$     b)  $0^\circ$     c)  $30^\circ$     d)  $60^\circ$

6. If A.M between two number is 40 and first number is 28,

Find the second number.

- a) 82    b) 52    c) 56    d) 100

7. Calculate G.M between 8 and 16

- a)  $8\sqrt{2}$     b)  $2\sqrt{8}$     c)  $3\sqrt{2}$     d)  $8\sqrt{3}$

8. Find the sum of first 8 terms of a geometric series

$$1 + 2 + 4 + 8 + 16 + \dots\dots\dots$$

- a) 525    b) 552    c) 225    d) 255

9. If  $\vec{MN}$  displaces M ( 5, 4 ) to N( 7, 6 ), find the direction of  $\vec{MN}$

- a)  $45^\circ$     b)  $60^\circ$     c)  $30^\circ$     d)  $90^\circ$

10. If  $\cos A = \frac{4}{5}$ , find the value of cosec A

- a)  $\frac{3}{5}$     b)  $\frac{5}{3}$     c)  $\frac{3}{4}$     d)  $\frac{4}{3}$

11. How much more is Rs 3060 than the value including 13% VAT in Rs 2700 ?

- a) Rs 19    b) Rs 29    c) Rs 31    d) Rs 9

12. If a dice is thrown two time, find the probability of the outcomes being 5 in the first throw and an odd number in the second row ?

- a)  $\frac{1}{12}$     b)  $\frac{2}{3}$     c)  $\frac{5}{6}$     d)  $\frac{2}{9}$

13. Find the radius of a sphere whose TSA is  $8\pi \text{ cm}^2$

- a)  $\sqrt{3} \text{ cm}$     b) 2 cm    c) 3 cm    d)  $\sqrt{2} \text{ cm}$

14. If the radius of the sphere is made thrice, by how many times does its volume increase ?

- a) 4 times    b) 9 times    c) 27 times    d) 3 times

15. If the area of square garden is  $225 \text{ m}^2$ , find its perimeter.
- a) 60m    b) 36m    c) 30m    d) 54m
16. The total surface area of a cube is  $96\text{cm}^2$ , find its volume.
- a)  $46\text{cm}^3$     b)  $64\text{cm}^3$     c)  $48\text{cm}^3$     d)  $84\text{cm}^3$
17. What is the value of  $1^{x+y}$  ?
- a) 0    b)  $\infty$     c) 1    d) 2
18. What number must be added to each other of the ratio 9:11 so that sum may be in the ratio 5:6 ?
- a) 1    b) 2    c) 3    d) 4
19. If  $x^2 + 2 = 3^{2/3} + 3^{-2/3}$  then find the value of  $3x^2 + 9x$ .
- a) 12    b) 18    c) 8    d) 6
20. The perimeter of a triangle is 360 cm. If the ratio of Sides is 4:5:3 , find the area of triangle.
- a)  $4500 \text{ cm}^2$     b)  $5400 \text{ cm}^2$     c)  $4600 \text{ cm}^2$     d)  $6400 \text{ cm}^2$

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