

# HIMALAYAN WHITEHOUSE INTERNATIONAL COLLEGE

SCIENCE – XI

## SUPER-30 SCHOLARSHIP TEST, 2073

F.M.: 100

MODEL SET-II

Time: 90 Minutes

### IMPORTANT INSTRUCTIONS

Please read the following instructions carefully before you start answering the questions. The examination carries full marks of 100 and it must be completed within 90 minutes. The details of the examination contents are as follows:

SUBJECT	ENGLISH	PHYSICS	CHEMISTRY	BIOLOGY	MATHEMATICS
MARKS	20	20	20	20	20

### OTHER IMPORTANT INSTRUCTIONS

1. **Make dark** your correct answer in a separate ANSWER SHEET you are provided with.
2. Do not write anything on the QUESTION PAPER. If you need to do "ROUGH WORK", use extra sheet.
3. Time yourself as you work on each section so that you can complete the test within 90 minutes.
4. Try answering all questions. THERE IS NO NEGATIVE MARKING for wrong answer.

English

1×20=20

1. Something was found lacking, .....?  
a) wasn't they                      b) weren't they                      c) wasn't it                      **d) wasn't its**
2. Had I been there, I ..... everything myself.  
a) will have known                      b) would know                      **c) would have known**                      d) would have known
3. She got him ..... her cloths.  
a) wash                      **b) to wash**                      c) washing                      d) have washed
4. Many a man ..... arrested by the police.  
a) was                      **b) were**                      c) are                      d) has
5. Each of the suspected people ..... arrested by the police.  
a) was                      **b) were**                      c) has                      d) are
6. The collector and actor can hardly help us, .....?  
a) can't he                      b) can he                      **c) can't they**                      d) can they
7. Look! Romy .....so well.  
a) has been dancing                      **b) is dancing**                      c) has danced                      d) will dance
8. Tell me if you can work sincerely if you ..... for the post.  
a) were selected                      **b) are selected**                      c) have been selected                      d) will be selected
9. Fifty rupees ..... all I can afford to pay for your Tiffin.  
a) are                      b) were                      **c) is**                      d) have been
10. The Jury ..... divided, in ..... opinions.  
a) was his                      b) was their                      c) were his                      **d) were their**
11. She is as intelligent as .....  
**a) me**                      b) I                      c) my                      d) all
12. Reply of "How do you do?" is .....  
**a) how do you do?**                      b) fine                      c) all right                      d) nothing much
13. Has he brought ..... books?  
a) some                      b) any                      c) none                      **d) both a and b**
14. No rain fell that month, ..... the crops all failed.  
a) although                      **b) so**                      c) however                      d) as
15. Was it made by Punam? Also can be said as: .....  
a) was Punam made it                      b) did Punam made it                      **c) did Punam make it**                      d) Does Punam make it
16. Bina asked me .....  
a) what was my problem                      **b) what my problem was**                      c) what is your problem?                      d) what my problem is
17. The doctor ..... after the patient died.  
a) comes                      **b) has come**                      c) have come                      d) came
18. Ajit, ..... lives in a town, is an honest boy.  
**a) who**                      b) where                      c) whom                      d) whose
19. She is a girl ..... eighteen years.  
**a) of**                      b) in                      c) on                      d) at
20. My grandmother told me ..... so many audiocassettes.  
a) don't buy                      c) not buy                      **c) not to buy**                      d) bought



10. Beta rays consist of
  - a) positively charged particles
  - b) negatively charged particles**
  - c) neutral particles
  - d) all of the above
11. Which of the following will conduct electricity?
  - a) crystalline NaCl
  - b) fused NaCl**
  - c) molten sulphur
  - d) Diamond
12. The law of octaves was enunciated by
  - a) Lothar Mayer**
  - b) Mendeleev
  - c) Dobereiner
  - d) Newland
13. Chlorine molecule is formed due to
  - a) electrovalent bond
  - b) single covalent bond**
  - c) double covalent bond
  - d) triple covalent bond
14. Water molecules possess \_\_\_\_\_ shape.
  - a) Angular with bond angle 104.5°**
  - b) Planar with bond angle 120°
  - c) Tetrahedral with bond angle 109° 28'
  - d) Octahedral
15. All the matter is made up of very small particles which cannot be further broken down. These particles are called atoms. This statement is one of the assumptions of
  - a) Rutherford's nuclear theory
  - b) Bohr's theory
  - c) Dalton's atomic theory**
  - d) Kinetic theory of gases
16. Energy is absorbed when an electron jumps from
  - a) a higher energy level to lower energy level
  - b) a lower energy level to higher energy level**
  - c) One place to other in same shell
  - d) N-shell to M-shell.
17. From top to bottom in a group of the periodic table the electropositive character of the element.
  - a) increase**
  - b) decreases
  - c) remains unchanged
  - d) varies gradually
18. Bond during the formation of calcium oxide is
  - a) Coordinate covalent
  - b) Double covalent
  - c) Triple covalent
  - d) Ionic bond**
19. The number of ionic bonds an atom can form is called its
  - a) valency
  - b) ionovalency
  - c) electrovalency
  - d) covalency**
20. Which of the following is most reactive element?
  - a) Al
  - b) K**
  - c) Mg
  - d) Na

## Biology

1×20=20

1. Which part of eye controls the size of the lens?
  - a) Cornea
  - b) Ciliary body**
  - c) Iris
  - d) Suspensory ligaments
2. What are the osmoregulatory organs in protozoans?
  - a) Contractile vacuole**
  - b) Food vacuole
  - c) Nissl's granules
  - d) Incipient nucleus
3. In earthworm, fertilization is always of cross type. It is due to \_\_\_\_\_ nature.
  - a) hermaphrodite
  - b) protandrous**
  - c) protogynous
  - d) unisexual
4. Which one of the following is a true fish?
  - a) Jelly fish
  - b) Silver fish
  - c) Flying fish**
  - d) Star fish
5. Bioindicator of air pollution is
  - a) Green algae
  - b) Lichen**
  - c) Mushroom
  - d) Mucor
6. Which one of the following is dead tissue?
  - a) Phloem
  - b) Collenchyma
  - c) Xylem**
  - d) Sieve tube
7. The genetic material in HIV is
  - a) RNA
  - b) DNA
  - c) Both RNA and DNA**
  - d) None of these
8. Animals which can efficiently climb on wall, rock or trees fall in the category of ....
  - a) Scansorial/Arboreal**
  - b) Aquatic
  - c) Desert
  - d) Fossorial
9. Lion is
  - a) Producer
  - b) Primary Consumer
  - c) Predator**
  - d) Secondary consumer
10. When stem of herbaceous plant is cut, water oozes out due to
  - a) Root pressure**
  - b) Guttation
  - c) Transpiration
  - d) Photosynthesis
11. At which stage is chromosome morphology best studied in an organism?
  - a) Meiotic metaphase I
  - b) Meiotic metaphase II**
  - c) Mitotic metaphase
  - d) Mitotic anaphase
12. Who is considered as Father of Biology?
  - a) August Weismann
  - b) Aristotle**
  - c) Hugo de Vries
  - d) Lamarck
13. Canine teeth are present in
  - a) Man
  - b) Dog
  - c) Lion
  - d) All of these**
14. A flower is regarded as a modified
  - a) Shoot
  - b) Root
  - c) Bud**
  - d) Leaf
15. Transpiration through leaves is called
  - a) Cuticular transpiration
  - b) Lenticular transpiration
  - c) Stomatal transpiration**
  - d) Foliar transpiration
16. Viruses are made up of
  - a) Proteins and lipids
  - b) Proteins and nucleic acids**
  - c) Proteins and carbohydrates
  - d) Starch, protein and lipids
17. Which of the following belongs to the phylum Porifera?
  - a) Flatworms
  - b) Roundworms
  - c) Earthworm
  - d) Sporangium**
18. Female reproductive organ of a flower is
  - a) Calyx
  - b) Corolla
  - c) Androecium
  - d) Gynoecium**

19. What is zoological name of frog?  
 a) Bufo **b) Rana tigrina** c) Hemidactylus d) Chelone
20. Whale is ....  
 a) fish **b) mammal** c) reptile d) ave

**Mathematics**

**1×20=20**

1. If A and B are two disjoint sets then which of the following is true,  
 a)  $A \subseteq B$  b)  $B \subseteq A$  **c)  $A \cap B = \phi$**  d)  $A \cup B = \phi$
2. If the three points (1, 1), (2,-1) and (-1, k) are collinear, then the value of k is  
 a) 1/2 b) -2/5 **c) 5** d) none of these
3. The marked price of a radio is Rs. 1200. What is the discount rate if it is sold in Rs. 960?  
 a) 10% **b) 20%** c) 15% d) 8%
4. In the triangle ABC, If  $A = 6B = 3C$ , what will be the value of B?  
 a)  $30^\circ$  **b)  $20^\circ$**  c)  $10^\circ$  d)  $15^\circ$
5. If  $\vec{a} = 2\vec{i} - 3\vec{j}$ ,  $\vec{b} = \vec{i}$ , then the angle between them is  
**a)  $\cos^{-1}\left(\frac{2}{\sqrt{13}}\right)$**  b)  $\cos^{-1}\left(\frac{\sqrt{13}}{2}\right)$  c)  $\cos^{-1}\left(\frac{-2}{\sqrt{13}}\right)$  d) None of these
6. The area of circle with the centre at origin and passing through (1, 1) is  
 a)  $\pi$  **b)  $2\pi$**  c)  $\sqrt{2\pi}$  d) 4
7. If the sum to n terms of a series is  $2n + 3n^2$  then its  $10^{\text{th}}$  term is  
 a) 95 **b) 59** c) 14 d) 15
8. If  $x, y \in R$  and  $x < y \Rightarrow x^2 > y^2$  then  
 a)  $x > 0$  **b)  $x < 0$**  c)  $y > 0$  d)  $y < 0$
9. If the sum of two unit vectors is a unit vectors then magnitude of their difference is  
 a) 0 **b) 1** c)  $\sqrt{3}$  d)  $\sqrt{2}$
10. The probability that at least one of A and B occurs is 0.6. If A and B occur simultaneously with probability 0.2 then  $P(\bar{A}) + P(\bar{B})$  is  
 a) 1.2 b) 2 **c) 2.1** **d) None of these**
11. The set  $S = \{x: x^2 + 6 = 0\}$  where  $x \in R$  is  
 a) a singleton set b) a pair set **c) a null set** d) difference set
12.  $\tan\left(\frac{\pi}{4} + \theta\right) \tan\left(\frac{\pi}{4} - \theta\right) =$   
**a) 1** b) -1 c) 2 d) None of these
13. If  $5^x \times 5^y = 5^{100}$ , the arithmetic mean of x and y is  
 a) 25 **b) 50** c) 100 d) None of these
14. The value of  $\sin 105^\circ$  is  
 a)  $\frac{\sqrt{3}-1}{2\sqrt{2}}$  b)  $\frac{\sqrt{2}+1}{2\sqrt{3}}$  **c)  $\frac{\sqrt{3}+1}{2\sqrt{2}}$**  d) None of these
15. The distance between the lines  $3x + 4y = 6$  and  $6x + 8y = 15$  is equal to  
 a)  $\frac{3}{2}$  b) 6 **c)  $\frac{3}{10}$**  d) None of these
16. The value of  $\tan 1^\circ \cdot \tan 2^\circ \dots \tan 89^\circ$  is  
**a) 1** b) 2 c) 10 d) 25
17. If the vectors  $2\vec{i} + 3\vec{j}$  and  $p\vec{i} - 2\vec{j}$  are orthogonal, then the value of p is  
**a) 3** b)  $\frac{1}{\sqrt{3}}$  c)  $\sqrt{3}$  d)  $\frac{1}{\sqrt{2}}$
18. Inverse of the matrix  $\begin{bmatrix} 3 & 2 \\ 1 & -5 \end{bmatrix}$  is  
 a)  $\frac{1}{17} \begin{bmatrix} 3 & -2 \\ -1 & -5 \end{bmatrix}$  b)  $-\frac{1}{17} \begin{bmatrix} -5 & 2 \\ 1 & -3 \end{bmatrix}$  **c)  $-\frac{1}{17} \begin{bmatrix} -5 & -2 \\ -1 & 3 \end{bmatrix}$**  d)  $-\frac{1}{17} \begin{bmatrix} 3 & 2 \\ 1 & -5 \end{bmatrix}$
19. The value of  $(-2, 3) \cap (-1, 4)$  is  
 a) (-2, 4) b) (1, 3) c) (-2, 3) **d) (-1, 3)**
20. The equations  $x+y=2$  and  $2x+2y=3$  have  
 a) unique solution **b) No solution** c) two solution d) many solution