

# Olympiad Foundation

**SAMPLE PAPER CLASS 10<sup>th</sup>**



**OLYMPIAD FOUNDATION**



## Division of Marks

S.No.	Topic/Section	No. of Question	Marks
1	Science	25	25
2	HOTS (High Order thinking Skill)	10	10
3	Reasoning & Mental Ability	15	15
	<b>Total</b>	<b>50</b>	<b>50</b>

### INSTRUCTIONS :

1. Use Blue/Black ballpoint pen only to darken the appropriate circle.
2. Mark should be dark and should completely fill the circle.
3. Dark only one circle for each entry.
4. Dark the circle in the space provided only.
5. Rough work must not be done on the answer sheet and do not use white-fluid or any rubbing material on Answer Sheet.
6. Each question carries one mark.

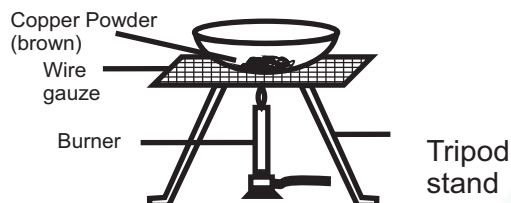
Select the correct answer and darken your answer in the table :

### SCIENCE

1. Which of the following metals is protected by a layer of its oxide ?

- (A) Copper (B) Silver  
(C) Iron (D) Aluminum

2. What will happen ?



- (A) Cu will melt (B) Cu will turn to black powder  
(C) Cu will sublime (D) Explosion will occur

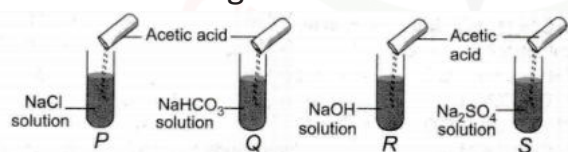
3. A solution reacts with crushed egg - shells to give as gas that turns lime milky. The solution contains.

- (A) NaCl (B) HCl (C) LiCl (D) KCl

4. Many metals occurs in native state in nature because -

- (A) They are very active (B) Can be produced from it  
(C) Can be produce from it profitably (D) Is very costly

5. In which of the following tubes effervescence will occur ?



- (A) P (B) Q (C) R (D) S

**Read the following passage and answer Q nos. 6, 7 and 8.**

P, Q and R are three elements with atomic number,  $Z - 1$ ,  $Z$  and  $Z + 1$  respectively. Q is an inert gas.

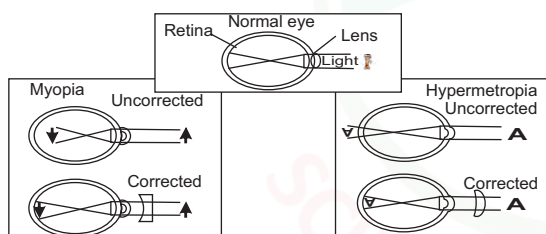
6. Identify the group which P and R belong.

- (A) Alkali metal, Alkaline metal (B) Halogen, alkali metal  
(C) Insert gas, Alkali metal (D) Halogen, Insert gas

7. Identify the elements having same valence shell.

- (A) P & Q (B) Q & R (C) R & R (D) P, Q & R

8. Which of the three has least value of ionization energy ?  
 (A) P (B) Q  
 (C) R (D) Cannot be predicated
9. Following are the hormones of our body belonging to a common chemical group of steroid. Identify the odd one.  
 (A) Testosterone (B) Corticosteroids  
 (C) Estrogen (D) Prostaglandin
10. Which of the following pairs is incorrectly matched ?  
 (A) Rose - Cutting (B) Bougainvillea - Budding  
 (C) Apple - Grafting (D) Grape vine - layering
11. Which of the following factors could lead to the rise of new species ?  
 (A) Genetic drift (B) Indbreeding  
 (C) Natural selection (D) Both A & C
12. A person looks into the mirror by placing it close to his face. The image of his face was erect, laterally inverted and of the same size. Then the mirror must be -  
 (A) Plane (B) Concave  
 (C) Concave (D) Plane or concave
13. Observe the following diagram and answer the following question.



The lens is the eye and corrective lenses all serve the same general purpose. What is the purpose ?

- (A) To reflect light (B) To open up the eye to light  
 (C) To reflect light (C) To reduce the amount of light
14. Which of the following is not true ?  
 (A) Galvanometer is used to detect the presence of current  
 (B) We cannot isolate a single pole.  
 (C) We can magnetize an iron ring.  
 (D) A permanent magnet retains its magnetism even when heated on a flame.
15. The site of a hydroelectric plant should be chosen careful because it -  
 (A) Produces a large amount of carbon monoxide  
 (B) Produce a large amount of electricity  
 (C) Affects the organism of the region  
 (D) Is expensive

16. In a terrestrial ecosystem, only about 1% energy of energy of sunlight is fixed by green plants and converted into food energy. How much amount of this food energy is available to the next level of herbivores.  
(A) 1 % (B) 2 % (C) 5 % (D) 10 %
17. Two resistance are connected in parallel and a current is sent through the combination. The current divide itself -  
(A) In the inverse ratio of resistance (B) In the direct ratio of resistance  
(C) Equally in both the resistance (D) None of these
18. A group of population splitting into two populations, can be called two independent species only when -  
(A) They can interbreed with each other  
(B) They cannot interbreed with each other  
(C) They are not geographically isolated  
(D) None of these
19. Who has suggested that first primitive organism arose from a collection of chemicals through a progressive series of chemical reactions ?  
(A) Stanley Miller (B) J.B.S Haldane  
(C) C. Urey (D) Louis Pasteur
20. Which of the following statements is not true about arteries ?  
(A) They carry blood away from the heart to various organ of the body.  
(B) Possess valves to prevent back flow of blood  
(C) They have thick and elastic walls  
(D) Carry oxygenated blood except pulmonary artery
21. The pair of atomic number which belongs to the same group  
(A) 9, 14 (B) 17, 51  
(C) 6, 53 (D) 12, 56
22. What is common among the ores of different metals ?  
(A) They are all oxides (B) They are all sulphide  
(C) They are all minerals (D) They are all black in colours
23. Which of them is weak acid ?  
(A) HCL (B)  $\text{H}_2\text{SO}_4$   
(C)  $\text{CH}_3\text{COOH}$  (D)  $\text{HNO}_3$
24. What does the information source for making proteins lie in the cell ?  
(A) In DNA (B) In cell membrane  
(C) In cytoplasm (D) In vacuole

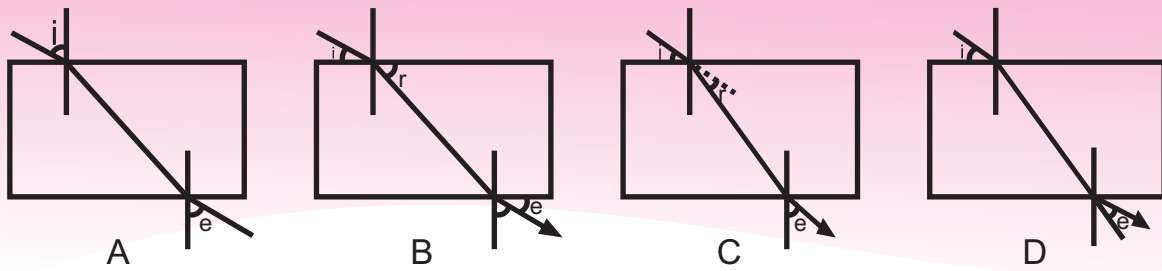
25. The substance having highest refractive index is -  
(A) Glass (B) Water  
(C) Air (D) Diamond

**HOTS (HIGHER ORDER THINKING SKILLS)**

26. The range of vision of normal human eye is -  
(A) 25 cm to infinity (B) 0 cm to 50 cm  
(C) 100 cm to 1000 cm (D) 100 cm to infinity
27. Which of following is not the part of hind brain ?  
(A) Pons (B) Medulla  
(C) Cerebellum (D) Cerebrum
28. Ganga cleanliness scheme was started in the year.  
(A) 1985 (B) 1970  
(C) 2000 (D) 1995
29. What percentage of total electricity is generated by nuclear in India.  
(A) 4% (B) 3%  
(C) 10% (D) 8%
30. The slides is always first focused at -  
(A) 40x (B) 30X  
(C) 30X (D) 10X
31. Which one of the following salt solution is colourless  
(A)  $\text{CuSO}_4$  (B)  $\text{FeSO}_4$   
(C)  $\text{Al}(\text{SO}_4)_3$  (D)  $\text{NiSO}_4$
32. The colour of zinc Sulphate solution is -  
(A) White (B) Green  
(C) Yellow (D) Colourless
33. Three resistors of value  $3\Omega$  are connected in parallel, the total resistance would be -----  
(A)  $3\Omega$  (B)  $9\Omega$   
(C)  $6\Omega$  (D)  $1\Omega$
34. Oil and fats commonly used for preparation of soap are called  
(A) Carboxylic acid (B) Esters  
(C) Alcohol (D) Glycerol



35. In an experiment to trace the path of a ray of light passing through a rectangular glass slab, the correct measurement of angles of incidence (i) (r) and emerged (e) is shown in the diagrams.



(A) A

(B) B

(C) C

(D) D

### REASONING AND MENTAL ABILITY

36. Find the missing term in the given series :

APZ, BRY, DTW, GVT, KXP, \_\_\_\_\_

(A) PZX

(B) PZL

(C) OZX

(D) OYL

37. GRIN: RING :: ? : NECKLACE

(A) NEECKLAC

(B) ENECKLAC

(C) LACENECK

(D) NECKLAEC

38. Choose the one which is different from others.

(A) 217

(B) 139

(C) 517

(D) 739

39. In a certain code language,

i. 'pit dar na' means 'you are good'

ii. 'Dar tok pa' means 'good and bad'

iii. 'time na tok' means 'they are bad'

In that language, which word stands for 'they' ?

(A) Na

(B) Time

(C) Tok

(D) Pit

40. Anil introducing a girl in a party said, "She is the wife of the grandson of my mother." How is Anil related to the girl ?

(A) Father

(B) Father - in - law

(C) Husband

(D) Grandfather

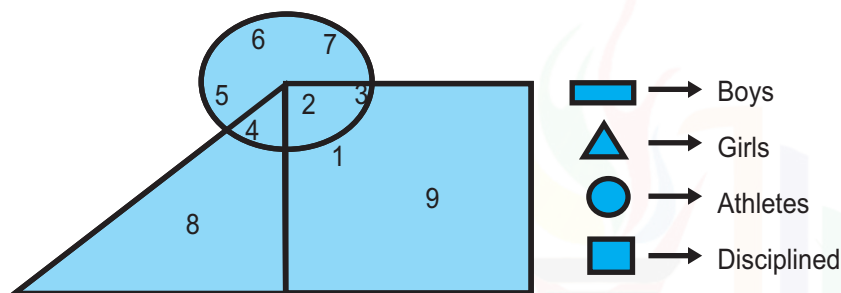
41. Five boys are standing in a row facing south. Pranav is the left of Tarun, Vipin and Chandan. Tarun, Vipin and Chandan are to the left of Nakul. Chandan is between Traun and Vipin. If Vipin is fourth from the left, then how far is Tarun from the right ?

- (A) First  
(B) Second  
(C) Third  
(D) Fourth

42. If north becomes South - East and South - East becomes west and the direction are arranged accordingly, then what will North - west become ?

- (A) South - West  
(B) South - East  
(C) East  
(D) South

43. In the given diagram, the boys who are athletes and are indicated by which number ?



- (A) 1  
(B) 2  
(C) 10  
(D) 6

44. How many pairs of letters are there in the word COMMUNICATION, which have as many letters between them in the word as in the English alphabet ?

- (A) Five  
(B) Two  
(C) Three  
(D) More than five

45. If the following numbers are written in the descending order, then what will be the middle digit of the middle term ?

723, 789, 584, 659, 713, 785, 689

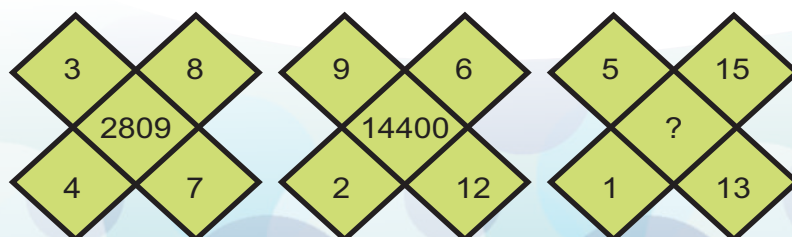
- (A) 1  
(B) 7  
(C) 8  
(D) 3

46. Choose the correct order of sign.

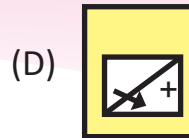
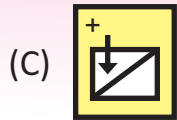
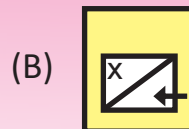
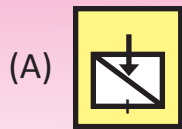
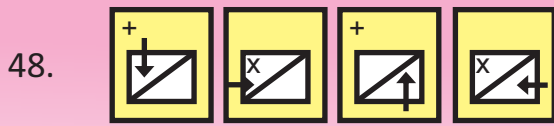
66 \_ 27 \_ 13 \_ 3

- (A) = - X  
(B) X = -  
(C) - = X  
(D) - X +

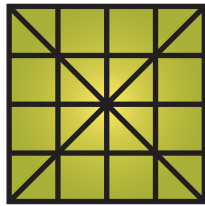
47.



- (A) 780  
(B) 900  
(C) 6400  
(D) 8100



49. Find the number of triangles in the given figure.



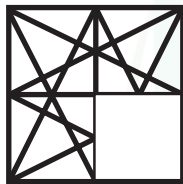
(A) 36

(B) 40

(C) 48

(D) 50

50. Select a figure from the options which will complete the pattern in fig. (X)



### Answer Key

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 1. D  | 11. D | 21. D | 31. A | 41. B |
| 2. B  | 12. A | 22. C | 32. D | 42. C |
| 3. B  | 13. A | 23. C | 33. D | 43. B |
| 4. C  | 14. D | 24. A | 34. B | 44. D |
| 5. B  | 15. C | 25. D | 35. A | 45. A |
| 6. B  | 16. D | 26. A | 36. A | 46. C |
| 7. A  | 17. A | 27. D | 37. B | 47. C |
| 8. C  | 18. B | 28. A | 38. A | 48. C |
| 9. D  | 19. B | 29. B | 39. B | 49. C |
| 10. B | 20. B | 30. D | 40. B | 50. D |