





# ISO SCIENCE OLYMPIAD

## Sample Paper

Basic:(3 Points)

- X is the medicine which is made with the help of micro-organisms mainly fungi and bacteria and used in killing or stopping the growth of the disease-causing micro-organisms. Here X can be  
 (A) Vaccines                      (B) Antibiotics                      (C) Antipyretic drugs                      (D) Analgesic
- The synthetic polymer used for the coating of non-stick cookware in non-reactive polymer. This is because of  
 (A) The strength of carbon-Sulphur bonds                      (B) The strength of carbon-fluorine bonds  
 (C) The strength of carbon bonds                      (D) None of the above
- Presence of \_\_\_\_\_ in a dry gaseous fuel does not contribute to its calorific value.  
 (A) Sulphur                      (B) Oxygen  
 (C) Carbon                      (D) Hydrogen
- The given table shows the reactivity series of metals. Identify correct option for X, Y and Z.

X		<p style="color: orange; font-weight: bold;">Most reactive</p>  <p>Increasingly reactive</p>  <p style="font-weight: bold;">Least reactive</p>
Na	Sodium	
Ca	Calcium	
Mg	Magnesium	
Al	Aluminum	
Zn	Zinc	
Y		
Sn	Tin	
Pb	Lead	
Cu	Copper	
Mg	Mercury	
Z		
Au	Gold	

X	Y	Z
(A) Potassium	Iron	Silver
(B) Iron	Sodium	Diamond
(C) Silver	Iron	Sodium
(D) Iron	Silver	Sodium

5. Which of the following force is contact force?  
 (A) Electric force (B) Magnetic force  
 (C) Gravitational force (D) Frictional force

**Foundation: (4 Points)**

6. Which of the following incorrectly represents the difference between internal and external fertilization?

Internal fertilization	External fertilization
(A) It is the fusion of sperm and ovum inside the body of the female	It is the fusion of sperm and ovum outside the body of the female
(B) It occurs in humans, hens, cows, etc.	It occurs in fish, frogs, etc.
(C) It does not require the presence of water	Presence of water is must for this
(D) It requires the presence of wind	It may or may not require the presence of wind

7. Epinephrine, also called emergency hormone, is  
 (A) An adrenal hormone (B) Glomerulus of mammalian kidney  
 (C) Proximal part of nephron (D) Stomium of nephron
8. Mass and weight are not the same, but they are related. A book has a mass if 1.2 kilograms. What is its weight?  
 (A) 0.12 N (B) 0.012 N (C) 12 N (D) 1.2 N
9. Which of the following frequencies can be heard by a normal human being?  
 (i) 1 Hz (ii) 100 Hz (iii) 10000 Hz  
 (A) i and ii only (B) ii and iii only (C) i and iii only (D) i, ii and iii only
10. The distance from the center of earth to the center of the moon is called  
 (A) Orbital length of the earth (B) Orbital radius of the earth  
 (C) Orbital length of the moon (D) Orbital radius of the moon

**Exploration: (5 Points)**

11. Which of the following reactions will not take place easily?  
 (A)  $K(S) + NaCl(aq) \rightarrow KCl(aq) + Na(S)$   
 (B)  $Mg(S) + Pb(NO_3)_2(aq) \rightarrow Pb(S) + Mg(NO_3)_2(aq)$   
 (C)  $Zn(S) + Cu(NO_3)_2(aq) \rightarrow Zn(NO_3)_2(aq)$   
 (D)  $2AgNO_3(aq) + Cu(S) \rightarrow 2Ag(S) + Cu(NO_3)_2(aq)$
12. A 4.0 kg block of wood is pulled along a horizontal ground from rest and a force of 15 N is required to produce an acceleration of  $2.0 \text{ ms}^{-2}$  on the same horizontal ground what should the magnitude of the force be?  
 (A) 5 N (B) 7 N (C) 8 N (D) 10 N
13. Which pathogen causes AIDS, Gonorrhoea and syphilis?

AIDS	Gonorrhoea	Syphilis
(A) Bacterium	Bacterium	Virus
(B) Bacterium	Virus	Virus
(C) virus	Bacterium	Bacterium
(D) virus	Virus	Bacterium

14. A 4.0 kg block of wood is pulled along a horizontal ground from rest and a force of 15 N is required to produce an acceleration of  $2.0 \text{ ms}^{-2}$ . In order to pull the block of wood at a constant speed of  $5.0 \text{ ms}^{-1}$  on the same horizontal ground what should the magnitude of the force be?  
(A) 5 N (B) 7 N (C) 8 N (D) 10 N
15. An aero-plane travels at an average speed of  $800 \text{ kmh}^{-1}$  on an outward flight and at  $600 \text{ kmh}^{-1}$  on the return flight over the same distance. What is the average speed of the whole flight?  
(A)  $700 \text{ ms}^{-1}$  (B)  $600 \text{ ms}^{-1}$  (C)  $686 \text{ kmh}^{-1}$  (D)  $700 \text{ kmh}^{-1}$



## ANSWER KEY

1-B	2-B	3-B	4-A	5-D	6-D	7-D	8-C
9-B	10-D	11-B	12-B	13-C	14-B	15-C	

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