



# EDUHEAL FOUNDATION



## INTERACTIVE OLYMPIADS

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<b>ICO</b> INTERNATIONAL CYBER OLYMPIAD	<b>NISO</b> NATIONAL INTERACTIVE SCIENCE OLYMPIAD	<b>NIMO</b> NATIONAL INTERACTIVE MATHS OLYMPIAD	<b>NBTO</b> NATIONAL BIOTECHNOLOGY OLYMPIAD	<b>IEO</b> INTERNATIONAL ENGLISH OLYMPIAD	<b>IGO</b> INTERNATIONAL G.K. OLYMPIAD
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**NATIONAL  
BIOTECHNOLOGY  
OLYMPIAD**

**N B T O**

**9**  
Class

**A1**  
Paper  
Code

Academic Partner [WWW.EDUSYS.IN](http://WWW.EDUSYS.IN)

Creating  
**SUCCESS**  
Stories

A Unit of EDUSYS LEARNING MEDIA

AIEEE • IIT • PMT • OLYMPIADS

### IMPORTANT INFORMATION

- You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET**.
- The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 25 Questions each to be answered in 40 minutes. The Question paper for classes 7 to 12 contains 50 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the coordinator teacher.
- Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. The student can retain the Question Paper.

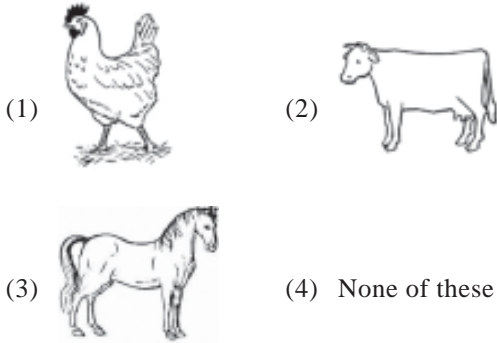
### GENERAL KNOWLEDGE

- Acid rain is caused due to pollution of atmosphere by
  - Oxides of carbon and Nitrogen
  - Oxides of Nitrogen and sulphur
  - Oxides of Nitrogen and phosphorus
  - None of these
- Eutrophication or excessive growth of plants in water bodies, choking off the oxygen supply of fishes and other water creatures, is caused by which pollutants?
  - Asbestos
  - Plastic
  - Chemical fertilizers
  - None of these
- Role of forest in conserving the environment.
  - Forest give out large amount of water and help in the formation of rain clouds
  - They prevent soil erosion and preserve nutrient rich top soil
  - They give out oxygen into atmosphere by photosynthesis
  - All of these
- The environmentalists insisting upon "Sustainable natural resource management" because
  - It shows awareness among people
  - Maximum natural resources can be saved.
  - Many of the environmental problems can be solved easily
  - All of these
- Poisoning by which element, present in fish living in polluted waters, can cause brain damage in people who consume these fish?
  - Asbestos
  - Mercury
  - Zinc
  - None of these
- Why do scientist think that human induced global warming will be more harmful to plants and animal than were past natural climate fluctuations
  - because temperature will change faster
  - because the temperature changes will be larger
  - because species now are less adaptable than species in species in the past
  - None of these
- Which one of the following is biodegradable
  - Bronze statue
  - Pencil shavings
  - Glass bangles
  - None of these
- CO<sub>2</sub> absorbs some of the ----- that radiation from the surface of earth to space
  - Ozone
  - Heat
  - Ultraviolet light
  - None of these
- 'Green house effect' means
  - Pollution in house in tropical region
  - Trapping of solar energy due to atmospheric carbondioxide
  - Prevention from ultraviolet radiations by the ozone
  - None of these

10. Which kind of pollutants ionise living cells, even causing damage to unborn babies?  
 (1) Radioactive waste (2) Flyash  
 (3) Mercury (4) None of these

**LIFE SCIENCE**

11. Which among these is a milch animal?

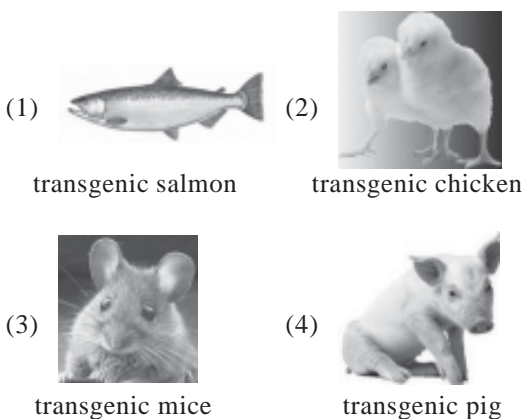


12. Which object in our solar system reflects light and is a satellite that orbits around one planet?  
 (1) Earth (2) the Moon  
 (3) the Sun (4) None of these

13. Changes in the weather are important to people living in Alaska. Which two tools **best** help scientists to share information about weather?  
 (1) radio and computer  
 (2) clock and notebook  
 (3) television and hand lens  
 (4) None of these

14. Abnormal, unlimited and uncontrolled cell division results in  
 (1) Pleurisy (2) Cancer  
 (3) Tumour (4) None of these

15. The first transgenic animal for food production was



16. This diagram shows the

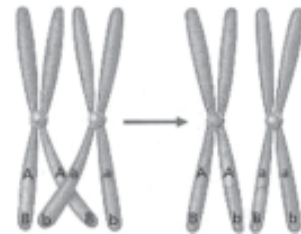


- (1) Karyokinesis (2) Cytokinesis  
 (3) Late telophase (4) None of these

17. Azolla has a symbiotic relationship with  
 (1) Chlorella (2) Anabaena  
 (3) Nostoc (4) None of these

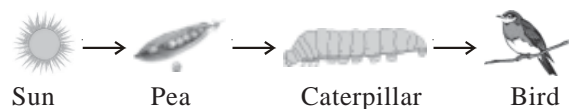
18. A particular triplet of bases in the coding sequence of DNA is AGT. What is the corresponding triplet in the complementary strand of DNA?  
 (1) GAC (2) AGT  
 (3) UCA (4) TCA

19. This stage occur in meiosis



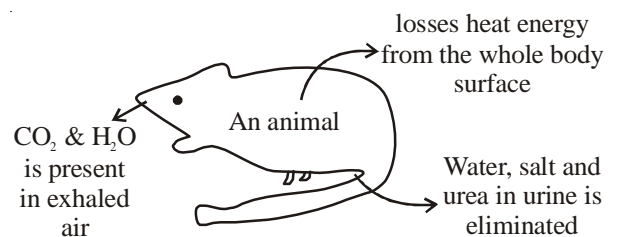
- (1) Karyokinesis (2) crossing over  
 (3) Telophase (4) None of these

20. Name the producer in the given energy flow diagram.



- (1) Sun (2) Pea  
 (3) Caterpillar (4) None of these

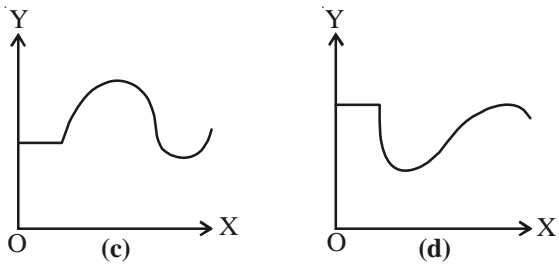
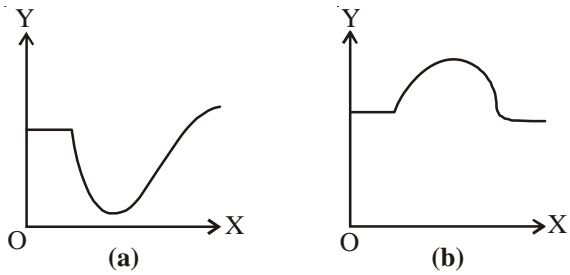
- 21.



All these things given in the diagram is removed form animals body. Among all these what will not be returned to the ecosystem and recycled?

- (1) heat energy (2) CO<sub>2</sub> & H<sub>2</sub>O  
 (3) Water salt (4) Urea

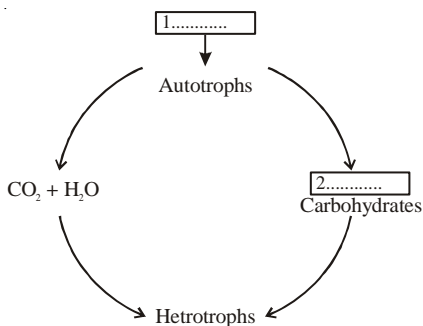
22. Which graph shows the effect of pollution by sewage on the amount of oxygen dissolved.



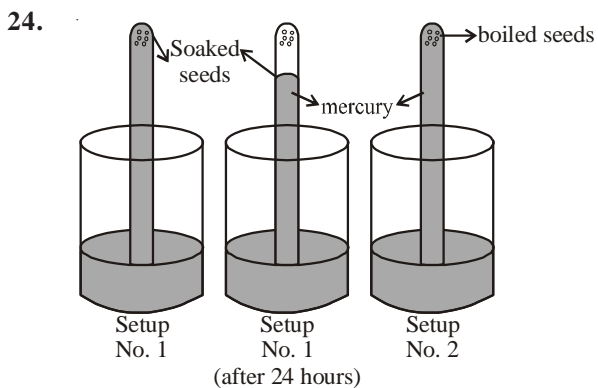
O-Y → dissolved oxygen  
O-X → distance downstream

- (1) a (2) b  
(3) c (4) d

23. In the flow chart given below, fill in the blank spaces with the kind of energy available.



- (1) heat energy and light energy  
(2) light energy and photochemical  
(3) heat energy and photochemical  
(4) None of these



This experiment demonstrates what?

- (1) Aerobic respiration  
(2) Anaerobic respiration  
(3) diffusion of carbondioxide  
(4) None of these

25. Blue revolution is concerned with  
(1) Cattle farming (2) Fish farming  
(3) Poultry farming (4) None of these
26. What is the function of vacuoles?



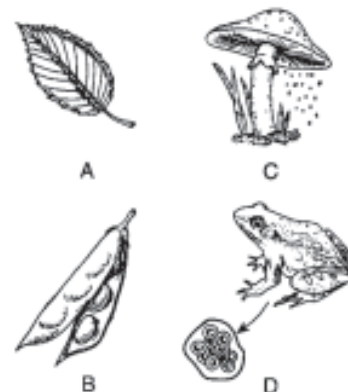
- (1) They provide turgidity and rigidity to the cell  
(2) They are storage sacs  
(3) Both (1) and (2)  
(4) None of these

27. Striated muscles are



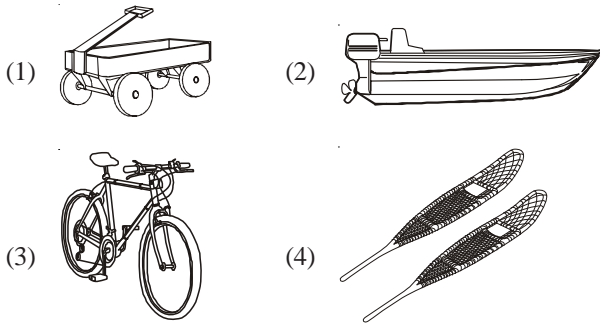
- (1) Involuntary muscles (2) Voluntary muscles  
(3) Both (a) and (b) (4) None of these

28. Which diagram illustrate structures that are not directly involved in the survival of a zygote?



- (1) A and D (2) B and D  
(3) B and C (4) A and C

29. Which of the following is **most** useful to a person traveling across deep snow?



30. Which of the following diseases is hereditary?

- (1) Haemophilia (2) Cancer  
(3) tuberculosis (4) None of these

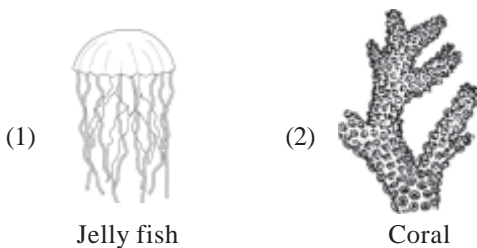
31. The correct model of DNA structure is proposed by

- (1) Jacob and Monod (2) Watson and Crick  
(3) Khurana (4) Baltimore and Temin

32. The source of immediate energy for cellular activity

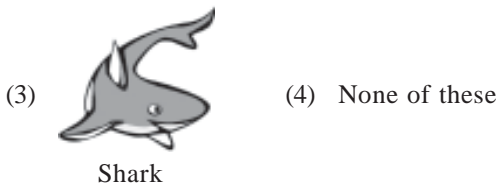
- (1) FAD (2) ATP  
(3) NAD (4) None of these

33. Which of these is not Coelenterate?



Jelly fish

Coral



Shark

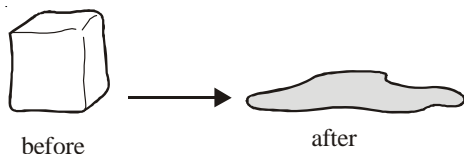
34. How many molecule of  $O_2$  can associate with a molecule of haemoglobin in man?

- (1) One (2) Four  
(3) Three (4) None of these

35. Genetic variation arises by

- (1) Recombination  
(2) Mutation  
(3) Chromosomal aberrations  
(4) All of the above

36. The picture below shows the melting of an ice cube.



The ice cube changed because it

- (1) cooled. (2) warmed.  
(3) hardened. (4) evaporated.

37. HIV stands for

- (1) High Immuno Deficiency Virus  
(2) Human Immuno Deficiency Virus  
(3) Health Infectious Virus  
(4) None of these

38. Fertilizers should be used carefully because

- (i) They can cause water pollution  
(ii) Increase in soil fertility is short lived  
(iii) They can be harmful to the micro organisms present in soil  
(1) (i) and (ii) only (2) (ii) and (iii) only  
(3) (i), (ii) and (iii) (4) None of these

39. Plant breeding is defined as science that deals with study of

- (1) Improvement in genotype of plants  
(2) Improvement in livestock  
(3) Improvement of soil structure  
(4) None of these

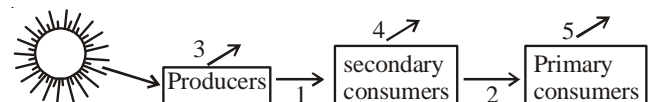
40. 'Okazaki' segments are

- (1) Segments of DNA capable of replication  
(2) Segments of chain of nucleotides formed during replication of DNA  
(3) Segments of a chain of nucleotides formed during transcription  
(4) None of these

### EtG INTERACTIVE SECTION

Based on the picture Ans. Q. No. 41 & 42

41. At which point the least amount of energy is transferred between organisms

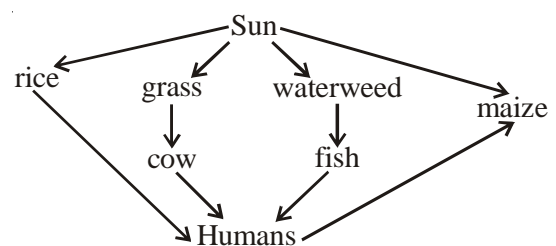


- (1) 2 (2) 1  
(3) 4 (4) 5

42. At which point the greatest amount of energy lost to the environment.

- (1) 4 (2) 5  
(3) 3 (4) None of these

The diagram illustrates part of a food chain for a given ecosystem (Q 43 - 44)



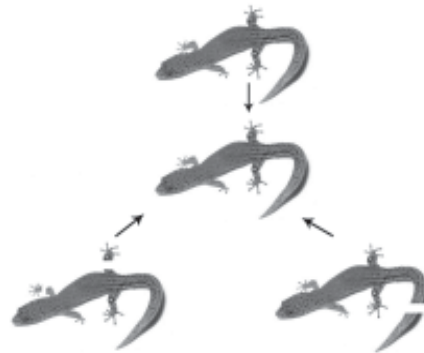
43. How many food chains are there?  
 (1) 3 (2) 4  
 (3) 2 (4) None of these
44. Which food chain is giving more efficient use of solar energy?  
 (1) Sun - rice - humans  
 (2) Sun - Maize - humans  
 (3) Sun - grass - cow - humans  
 (4) Both (1) and (2)

See the diagram and answer the Q's: 45-47



45. What is the harmful effect of this disease?  
 (1) Mental retardation (2) Cretinism  
 (3) Physical retardation (4) All of these
46. Choose the mineral whose deficiency causes this disease?  
 (1) Calcium (2) Iodine  
 (3) Potassium (4) None of these
47. Identify the above disease:  
 (1) Goitre (2) Rickets  
 (3) Kwashiorkor (4) None of these

48. Based on the picture answer the following. (Q. no. 48 - 50)



What type of reproduction is seen in the given figure.

- (1) Asexual Reproduction  
 (2) Sexual Reproduction  
 (3) Bisexual Reproduction  
 (4) None of these
49. Name the means of reproduction.  
 (1) Vegetative Reproduction  
 (2) Regeneration  
 (3) Sexual  
 (4) None of these
50. What happens in this?  
 (1) In this type of reproduction the organism has ability to replace lost or damaged body parts.  
 (2) In this type of reproduction the organism does not replace lost or damaged body parts.  
 (3) In this type of reproduction the organism's body part stops working after being damaged.  
 (4) None of these.



**END OF THE EXAM**

# ROUGH PAGE