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ICO INTERNATIONAL CYBER OLYMPIAD	NISO NATIONAL INTERACTIVE SCIENCE OLYMPIAD	NIMO NATIONAL INTERACTIVE MATHS OLYMPIAD	NBTO NATIONAL BIOTECHNOLOGY OLYMPIAD	IEO INTERNATIONAL ENGLISH OLYMPIAD	IGO INTERNATIONAL G.K. OLYMPIAD	BIFO BSE INTERNATIONAL FINANCE OLYMPIAD
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Level - 1 : All Level-1 successful* participants will get certificate, aptitude report and online subscription, and school toppers will be eligible for school hero medals.

Level - 2 : School toppers* will be selected for level-2-National level - online computer based interactive test held at exam centres all over India. Besides selection for level-3, winner will get merit certificate, medals, educational CDs, laptop, scholarship and other prizes. There is no level 2 in G.K. and Biotech.

Level - 3 : Toppers will qualify# for level 3-International level-where you will compete with students globally. Get selected for EHF's International Olympiad training camp. Only Indian organization giving students exposure to global competitions. Represent India & win laurels. Guidance by top scientists. Prizes ranges from cash (millions of \$), gadgets, foreign trips, publicity, fame, scholarships, Internships, conference participation and more. Level 3 is in Maths, Science & Cyber only.

*# See prospectus/website for details.

1. You are allowed additional 10 minutes to fill the required details in the **RESPONSE SHEET (OMR)**. **STUDENTS OF CLASS 1 & 2 HAVE TO UNDERLINE** THE CORRECT ANSWER IN THE QUESTION PAPER ITSELF. THEY ARE NOT REQUIRED TO USE THE RESPONSE SHEET (OMR). THEY HAVE TO FILL THEIR NAME, ROLL NUMBER, CLASS, SCHOOL NAME IN THE SPACE PROVIDED IN THE QUESTION PAPER.
2. 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 teacher.
3. 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 except for classes 1 and 2.

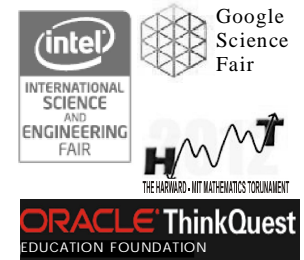
NATIONAL BIOTECHNOLOGY OLYMPIAD

N B T O

10
Class

A1
Paper
Code

LEVEL - 1



GENERAL KNOWLEDGE

1. The study related to the plants being used as vegetable is called
 - (1) Floriculture
 - (2) Pomology
 - (3) Horticulture
 - (4) Olericulture
2. Which of the following plants tolerate a strongly acidic soil and can grow well in it?
 - (1) Beans
 - (2) Pineapples
 - (3) Blue berries
 - (4) None of these
3. Which of the following isn't true about Ozone?
 - (1) It absorbs harmful UV rays in the stratosphere
 - (2) It's level in the stratosphere are decreasing due to CFC's
 - (3) It is a pollutant at ground level
 - (4) It is decreasing on the earth's surface
4. Hybrid antibodies are:
 - (1) Antibodies produced in cell cultures
 - (2) Antibodies designed using rDNA technology produced in cell culture
 - (3) Antibodies produced in in-vivo
 - (4) Both 1 and 2
5. It is dangerous to leave the engine of a car running in a closed garage as it can lead to poisoning by
 - (1) Carbon dioxide
 - (2) Carbon monoxide
 - (3) Petrol vapour
 - (4) None of these
6. Indian farmers are unhappy over the introduction of 'Terminator Seed Technology' because the seeds produced by this technology are expected to
 - (1) Give rise to sexually sterile plants
 - (2) Form low-yielding plants despite the high quality
 - (3) Show poor germination
 - (4) None of these
7. The sequencing of the entire genome of an organism was completed in 1996, the organism was
 - (1) Yeast
 - (2) Albino mouse
 - (3) Human being
 - (4) None of these

8. Which of the following is used as a biofertilizer
 (1) Azolla (2) Blue green algae
 (3) Both 1 and 2 (4) None of these
9. What are the name of the two genders of haploid yeast cells?
 (1) A and Alpha (2) M and F
 (3) Y (a) and Y(b) (4) None of these
10. Who is the pioneer of 'White revolution' in India?
 (1) Swaminathan (2) Varghese Kurien
 (3) S.K. Birla (4) None of these

LIFE SCIENCE

11. Which of the following disease is also known as Japanese Encephalities?
 (1) Diarrhoea (2) Brain fever
 (3) Diabetes (4) None of these
12. Sour milk bacteria and blue green algae are examples of organisms from which kingdom?
 (1) Protista (2) Fungi
 (3) Monera (4) None of these
13. Exotic breed of poultry bird having high egg laying capacity are
 (1) Broiler (2) Dorset
 (3) White Leghorn (4) None of these
14. Most of the desert plants bloom during night time because
 (1) The desert insects eat away flowers during daytime
 (2) They are sensitive to the phases of moon
 (3) Their blooming is controlled by low temperature
 (4) None of these
15. Removal of stamens from a bisexual parent before they burst and shed is known as
 (1) Hybridization (2) Plant breeding
 (3) Agronomy (4) None of these
16. Genetic code is made up by the four letter alphabet forming the pairs
 (1) A-T, T-A, C-G, G-C
 (2) A-G, G-A, C-A, T-C
 (3) T-G, G-T, A-C, C-A
 (4) None of these
17. Mitosis is the name given to the process of cell division. What is the name given to the period between two mitotic cycles?
 (1) Metaphase (2) Interphase
 (3) Prophase (4) None of these
18. Which disease is also known as Hydrophobia?
 (1) Rabies (2) Dengue
 (3) Typhoid (4) None of these
19. Which of the following processes is not associated with plant growth and development ?
 (1) Cell division (2) Cell enlargement
 (3) Cell movement (4) None of these
20. Dairy animals kept for obtaining milk are termed as
 (1) Milch animals (2) Milk animals
 (3) Draught animals (4) None of these
21. The nitrogen bases which pair with two hydrogen bonds are
 (1) Adenine and thymine
 (2) Adenine and Cytosine
 (3) Cytosine and Guanine
 (4) Cytosine and Adenine
22. Disease which remain confined to the bearer and do not spread from infected person to healthy person is called
 (1) Non-communicable disease
 (2) Deficiency disease
 (3) Communicable disease
 (4) None of these
23. Plant breeding is defined as science that deals with study of
 (1) Improvement in livestock
 (2) Improvement in genotype of plants
 (3) Improvement of soil structure
 (4) None of these
24. Application of nitrogenous manure to a plant causes
 (1) Early fruiting
 (2) Growth retardation due to toxicity
 (3) Vigorous vegetative growth
 (4) None of these
25. The disease caused by radio active radiation is
 (1) Cancer (2) Malaria
 (3) AIDS (4) None of these
26. Which of these tissues in plants consists of dead cells?
 (1) Collenchyma (2) Sclerenchyma
 (3) Parenchyma (4) None of these
27. Which tissue is responsible for the growth of length of the plant?
 (1) Apical meristem (2) Lateral meristem
 (3) Intercalary meristem (4) None of these

28. Match the columns:

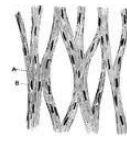
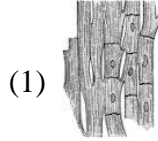
Column A	Column B
a. Frog	(1) Caterpillar
b. Butterfly	(2) Embryo
c. Cockroach	(3) Tadpole
d. Bird	(4) Lymph

Identify the correct pairing from the following

- (1) a-1, b-2, c-3, d-4
(2) a-3, b-1, c-4, d-2
(3) a-4, b-3, c-1, d-2
(4) None of these
29. A farmer noticed that some lettuce plants wilted badly and could be grown successfully only if transferred to a very humid green house. What is the most likely cause of the wilting?
- (1) Auxin deficiency
(2) ABA deficiency
(3) Glycophytic incipient plasmolysis
(4) None of these
30. Which of the following is a new biofertiliser?
- (1) Green blue algae (2) Compost
(3) Farmyard (4) None of these
31. Which of the following disease is more common in women than in men?
- (1) Gastritis
(2) Coronary thrombosis
(3) Rhemumatoid Arthritis
(4) None of these.
32. Plants developing in dry conditions are-
- (1) Xerophytes (2) Mesophytes
(3) Lithophytes (4) Hydrophytes
33. What do you understand by HYV?
- (1) High year variety
(2) Hybrid yielding variety
(3) High yielding variety
(4) None of these
34. Which one carries genetic message to ribosome ?
- (1) t-RNA (2) r-RNA
(3) m-RNA (4) None of these
35. Which condition would most likely upset the stability of an ecosystem ?
- (1) A cycling of elements between organisms and the environment.
(2) Green plants incorporating sunlight into organic compounds.

- (3) A greater mass of animals than plants.
(4) None of these.

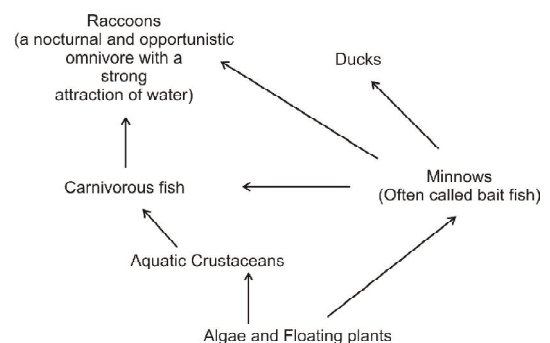
36. If in a given solution the cell has a higher water concentration, than that outside the cell, then the solution is a
- (1) Hypotonic solution (2) Isotonic solution
(3) Hypertonic solution (4) None of these
37. Which of the following is a striated muscle?



- (1) (2)
(3) Can't say (4) None of these
38. Which of the following belongs to Gymnosperm?
- (1) Lilies (2) Conifers
(3) Orchid (4) None of these
39. Water and minerals absorbed by roots are conducted to the whole parts of the plant by:
- (1) Phloem (2) Apical meristem
(3) Xylem (4) None of these
40. Which of the following is not mainly supplied by fertilizers?
- (1) Moisture (2) Fungi
(3) Rodents (4) None of these

ETG INTERACTIVE SECTION

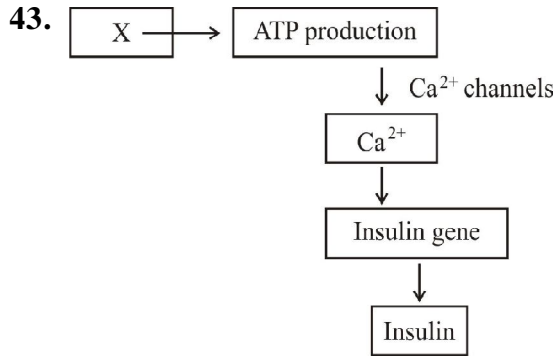
41. The diagram illustrates the relationships between the organisms in a certain pond. In this pond community, which organisms are secondary consumers?



- (1) Aquatic crustaceans and raccoons
(2) Ducks and carnivorous fish
(3) Carnivorous fish and aquatic crustaceans
(4) None of these
42. Sara would like to film the movement of chromosomes during cell division. Her best choice

for a microscope would be a

- (1) Light microscope, because the specimen is alive
- (2) Transmission electron microscope, because of its magnifying power
- (3) Scanning electron microscope, because the specimen is alive
- (4) None of these



In the above diagram 'X' represents which molecule

- (1) Starch
- (2) Protein
- (3) ATP
- (4) None of these

44. In humans the babies produced by in vitro fertilization and embryo transfer was popularly called as

- (1) Invitro babies
- (2) Test tube babies
- (3) Invitro-inviro babies
- (4) All of these

45. In most plants, the stomata on the leaves are closed at night and open during the day. Which of the following statement explains this pattern?

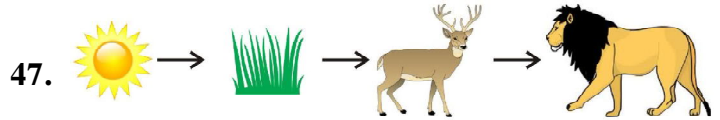
- (1) The stomata close at night to reduce water loss at a time when a plant does not need CO₂
- (2) The stomata are light sensitive and function only in the presence of solar radiation.
- (3) The high concentration of potassium in the nearby guard cells forces the stomata to close
- (4) None of these

46. Land plants die if their roots remain water logged. This is because

- (1) Roots are covered with a protective layer of dead cells having tiny openings called lenticels through which gaseous exchange occurs between the soil and inner living cells
- (2) Roots are covered with a protective layer of living cells having tiny openings called stomata through which gaseous exchange occurs between the soil and inner living cells

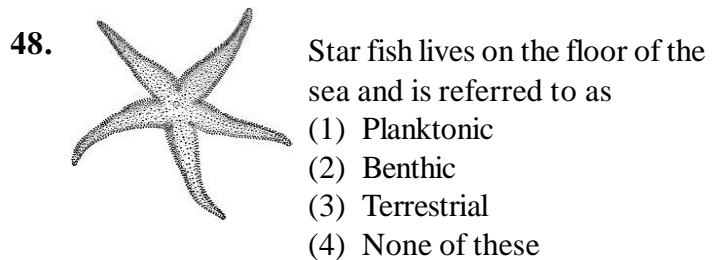
(3) Roots are covered with a protective layer of living cells having tiny openings called stomata through which gaseous exchange occurs between the soil and inner living cells

(4) None of these



In the above food chain, there is a transfer of energy from one trophic level to the next level. The available energy will be low in which trophic level?

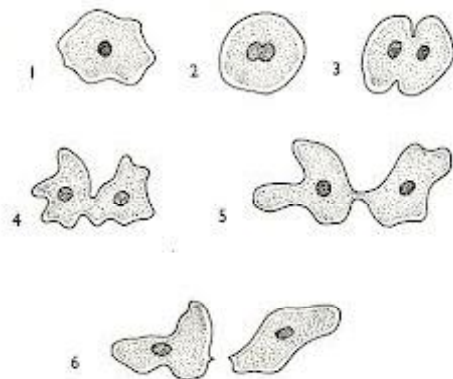
- (1) Green plants
- (2) Deer
- (3) Lion
- (4) None of these



49. Which of the following is responsible for the genetic characteristic in chromosomes?

- (1) Ribonucleic acid
- (2) Deoxy ribonucleic acid
- (3) Deoxy nucleic acid
- (4) None of these.

50.



The above diagram shows which process in Amoeba?

- (1) Binary fission
- (2) Digestion
- (3) Egestion
- (4) None of these



END OF THE EXAM