

21

The Competition in

Science & Research Skills

***Science & Research
Test I & II***

MODEL PAPERS

Class : IV



Eduranet

Intellectual Olympiad Foundation

(Promoted by Eduranet Educational Society (Regd. 309/09))

Hyderabad | India

Eduranet Intellectual Olympiad Foundation

10-3-304/A/2,
Humayun Nagar,
Hyderabad-500 028.
Andhra Pradesh,
India.

Phone : 040 - 23530999

Eduranet is a registered trademark of Eduranet Educational Services (P) Ltd., in India.

© Copyrights - Eduranet Intellectual Olympiad Foundation
2010

First Published - 2012

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, without the prior permission in writing, of Eduranet Intellectual Olympiad Foundation.

ISBN - 81- 89528- 04-1

SYLLABUS

General Awareness

1. General Awareness
2. World
3. India
4. Transportation
5. Map
6. The Universe

Science

1. Our Body
2. Food
3. Animals
4. Plants
5. States of Matter
6. Work Force & Energy

OurEnvironment

1. Our Society
2. Our Shelter and Clothes
3. Work and Play
4. Our Surroundings
5. Our Environment
6. Air Water and Soil

TABLE OF CONTENTS

- 1) **Science & Research Test - I 5-23**
- 2) **Science & Research Test - II 24-32**

SCIENCE & RESEARCH TEST-I

CODE:2141

PRELIMS

Max. Marks : 75

Duration : 75 Mins.

General Instructions :

1. Please find the Answer Sheets (OMR) with in the envelop given to you.
2. Mention your Test Code, Student ID, Name, Class, Section and School Name on the OMR Sheet as per Question Paper and Hall Ticket.
3. This question paper contains 75 Questions, duration is 75 minutes.
4. Do rough work in the empty sheet provided along with this question paper.
5. Answer questions in OMR sheet only.
6. Don't write or tick anything on the question paper.
7. Use only Black or Blue Ball Point Pen or Dark Pencil to answer the question in OMR sheet.
8. Indicate the correct answer by darkening one of the 4 or 5 responses provided.
9. Submit only OMR sheet to the invigilator

1. The moon

- a) Has a flat surface
- b) Has no light of its own
- c) Has plenty of water
- d) Has no atmosphere

- 2. The time taken by Earth for one rotation is**
- a) One month
 - b) Five days
 - c) One day
 - d) One year
- 3. How much of earth's surface is covered by water ?**
- a) One fourth
 - b) Almost two thirds
 - c) One half
 - d) Almost three fourths
- 4. The first four planets with small bodies are called-**
- a) Tiny planets
 - b) Dwarf planets
 - c) Giant planets
 - d) Inner planets
- 5. The next four planets largely consisting of hydrogen and helium gasses or frozen ammonia, methane or ice are called -**
- a) Giant planets
 - b) Huge planets
 - c) Dwarf planets
 - d) Outer planets

- 6. The Frozen snowballs of dust and gas are called -**
- a) Meteors
 - b) Asteroids
 - c) Comets
 - d) Planets
- 7. A band of rock between the orbits of Mars and Jupiter is called**
- a) Comets
 - b) Asteroids
 - c) Meteors
 - d) Dwarf planets
- 8. Pieces of rocks and dirt also known as shooting stars are**
- a) Meteors
 - b) Comets
 - c) Asteroids
 - d) Giant planets
- 9. The earth rotates from:**
- a) East to West
 - b) North to South
 - c) South to North
 - d) West to East

10. Which of the following layers of the earth has hot trapped gases and liquids at high temperature and pressure?

- a) Crust
- b) Soil
- c) Mantle
- d) Core

11. Name of a source of vitamin C

- a) Orange
- b) Crisps
- c) Meat
- d) Water

12. Which organ helps you in digestion of fats?

- a) stomach
- b) pancreas
- c) spleen
- d) liver

13. Your ___ stores bile.

- a) gall bladder
- b) liver
- c) pancreas
- d) stomach

14. The function of liver is to

- a) Metabolize carbohydrates, lipids and proteins
- b) Filtration of blood
- c) Detoxification of chemicals
- d) All of these

15. There are _____ milk teeth and _____ permanent teeth.

- a) 20,30
- b) 20,32
- c) 18,30
- d) 18,32

16. Which of the following is not a source of carbohydrate?

- a) Roti
- b) Potato
- c) Orange
- d) Bread

17. The function of gall bladder:

- a) Stores and concentrates bile
- b) Produces bile
- c) Store foods
- d) All of these

18. The presence of food in the small intestine causes

- a) Increase in gastric secretion
- b) Inhibition of gastric secretion
- c) No effect on gastric secretion
- d) Increase in digestion rate

19. Which of the following is a soft material in the tooth?

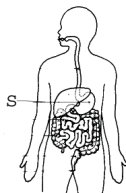
- a) Dentine
- b) Pulp
- c) Enamel
- d) Root

20. Teeth begin at the age of

- a) 12-13 years
- b) 2-3 years
- c) 20-25 years
- d) 13-16 years

21. Nutrients which are called protective foods are:

- a) carbohydrates
- b) Proteins
- c) fats and carbohydrates
- d) vitamins and minerals





22. Which of the following organs is indicated with the letter 'S' ?

- a) Mouth
- b) Ocesophagus
- c) Stomach
- d) Liver

23. Snake is a:

- a) parasite
- b) producer
- c) herbivore
- d) carnivore

24. Which of the following does not take care of their young ones?

- a) human 
- b) crocodile 
- c) bird 
- d) lion 

25. The eggs of fish are called:

- a) larva
- b) pupa
- c) spawn
- d) cocoon

26. We all know that animals eat plants. But there are some plants which eat small insects. Such plants are called insectivorous plants. Which of the following is an example of them?

- a) Vallisneria
- b) Venus fly trap
- c) Duckweed
- d) Jasmine

27. The plants that are most useful to man are:

- a) hilly plants
- b) underwater plants
- c) desert plants
- d) plants of the grass family

28. Which of the following processes is responsible for the release of oxygen by plants?

- a) Respiration
- b) Digestion
- c) Reproduction
- d) Photosynthesis

29. In radish, food is stored in:

- a) leaves
- b) stem
- c) roots
- d) flowers

30. Matter is

- a) Anything we can see
- b) Anything we can feel
- c) Anything that occupies space and has mass.
- d) Anything that has weight.

31. Which of the following is/are in a liquid state normally?

- a) Water
- b) Petrol
- c) Mercury
- d) All of these

32. Which of the following states of matter has the strongest forces of attraction between its molecules?

- a) Solid
- b) Liquid
- c) Gas
- d) All of these

33. The property of dissolving of a substance in a liquid is called its

- a) Diffusion
- b) Solution
- c) Solubility
- d) Solute

34. In a sugar solution, the sugar is the

- a) Solute
- b) Solvent
- c) Solution
- d) None of these

35. Gases can become liquid by

- a) Cooling
- b) Heating
- c) Diffusing
- d) Expanding

36. Which statement is not true?

- a) No new substance is formed in physical change
- b) Composition of substance is not changed in physical change
- c) Physical change is not a temporary change
- d) Color may be change in physical change

37. Which Change is permanent change?

- a) Physical change
- b) Chemical change
- c) Magnetic change
- d) Abiotic change

38. Work is :

- a) An activity one gets tired doing
- b) An activity depending on spending time on that.
- c) The displacement due to an applied force.
- d) All physical and mental engagement

39. Energy stored in our muscles is called :

- a) physical energy
- b) Muscular energy
- c) Wind energy
- d) Elastic energy

40. The energy we get from sun is called:

- a) Solar energy
- b) Mechanical energy
- c) Electric energy
- d) Thermal energy

41. Energy is :

- a) Power of an object
- b) Ability to do work
- c) push or pull on object
- d) To overcome force and friction

42. Electrical energy can be produced by:

- a) Coal
- b) Water
- c) Uranium
- d) All of these

43. Mathematical expression for work done:

- a) Friction \times displacement
- b) Force \times speed
- c) Friction \times speed
- d) Force \times displacement

44. Scissors, seesaw, water pump, hammer are examples of :

- a) Wedge
- b) Lever
- c) Wheel and axle
- d) Inclined plane

45. For lifting any object we can use:

- a) Lever
- b) Wheel and axle
- c) pulley
- d) Screw

46. Raju is feeling very hot on a summer day. He is sweating too much due to the blazing sun. What clothes will keep him comfortable ?

- a) Woollen clothes
- b) Cotton clothes
- c) Nylon clothes
- d) Silk clothes

47. Silk clothes are prepared from silkworms at which of the following stages of its life cycle?

48. Which of the following is not a natural resource?

- a) water
- b) petroleum
- c) Plastic
- d) Forest

49. Clouds are made of -

- a) Dust particles
- b) Mist
- c) Water droplets
- d) Moisture

50. Soil is formed by-

- a) Dust particles
- b) Breaking up of rocks
- c) Clay
- d) Deformation of trees

51. Urea is a

- a) Pesticide
- b) Fertilizer
- c) Manure
- d) Seed

52. Which substance produces fertility in the soil?

- a) Water
- b) Clay
- c) Humus
- d) Soil organisms

53. The small raindrops are called

- a) Moist
- b) Dew
- c) Frost
- d) Drizzle

54. How much oxygen does the soil contain?

- a) 46%
- b) 20%
- c) 90%
- d) 31%

55. Which of the following is not true regarding the property of air?

- a) Air occupies space
- b) Air exerts pressure
- c) Air cannot be seen
- d) Air has no mass

56. Most abundant component of air is:

- a) Nitrogen
- b) Carbon-dioxide
- c) Oxygen
- d) Hydrogen

57. The process in which water changes its liquid state to gas is known as -

- a) Condensation
- b) Precipitation
- c) Evaporation
- d) Transportation

58. Water droplets forming outside a glass containing cold water is an example of

- a) Condensation
- b) precipitation
- c) Transportation
- d) Evaporation

59. We measure wind speed by an instrument known as:

- a) Barometer
- b) Anemometer
- c) Thermometer
- d) Speedometer

60. The fine droplets observed on the leaves of plants and grass on a winter morning are:

- a) Snow
- b) Hailstones
- c) Fog
- d) Dew drops

-
- 61. They help in digestion and to get rid of undigested food**
- a) Minerals
 - b) Vitamins
 - c) Roughage
 - d) both a and b
- 62. They help in repair and growth of our body parts**
- a) proteins
 - b) carbohydrates
 - c) Fats
 - d) Vitamins
- 63. Food that contains all nutrients in required quantity is known as**
- a) Complete nutrients
 - b) balanced diet
 - c) unbalanced diet
 - d) both b and c
- 64. For good eye sight and healthy skin, We should eat**
- a) Fatty food
 - b) Carrot and eggs
 - c) Milk
 - d) Curd
- 65. Amphibians have**
- a) Moist skin to breathe in water and lungs to breathe on land
 - b) Legs to move and lungs to breathe
 - c) Light body and feathers
 - d) None of the above

66. Animals living in warmer regions have

- a) scales on their body
- b) thick fur
- c) Thick and less hairy skin
- d) all a,b,c

67. The place where an organism lives is called

- a) House
- b) Home
- c) Region
- d) Habitat

68. The plants of the grass family give us the main food that are

- a) Straw and Sugar cane
- b) Rice and Wheat
- c) Nuts and Fruits
- d) None of the above

69. A Cactus plant saves water by

- a) Not having roots
- b) Not having stem
- c) Not having leaves
- d) Not having fruits

70. A lotus plant has

- a) Broad leaves
- b) Needle like leaves
- c) Very thin leaves
- d) both b and c

71. These are the natural fibres obtained from plants

- a) wool and silk b) cotton and jute
c) silk and jute d) cotton and wool

72. A carpenter uses

- a) saw, plane, drill
b) spannet, scissors, screw driver
c) wheel, mud, water
d) scissor, mud, plane

73. A person who can cook very good food in a hotel or a restraunt

- a) chef b) waiter
c) porter d) chauffer

74. The process of producing young ones in a living thing is called

- a) growth b) respiration
c) reproduction d) both a and c

75 The leaves of ____plant show movement

- a) Touch me not b) sunflower
c) palm tree d) coconut tree

KEY TO MODEL PAPER - I

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 1. b | 2. c | 3. d | 4. d | 5. c | 6. c |
| 7. b | 8. a | 9. d | 10. d | 11. a | 12. d |
| 13. a | 14. a | 15. b | 16. c | 17. a | 18. d |
| 19. b | 20. b | 21. d | 22. c | 23. d | 24. b |
| 25. c | 26. b | 27. d | 28. d | 29. c | 30. c |
| 31. d | 32. a | 33. c | 34. a | 35. a | 36. c |
| 37. b | 38. c | 39. b | 40. a | 41. b | 42. d |
| 43. d | 44. b | 45. c | 46. b | 47. c | 48. c |
| 49. c | 50. b | 51. b | 52. c | 53. d | 54. a |
| 55. d | 56. a | 57. c | 58. a | 59. b | 60. d |
| 61. c | 62. a | 63. b | 64. b | 65. a | 66. c |
| 67. d | 68. b | 69. c | 70. a | 71. b | 72. b |
| 73. a | 74. c | 75. a | | | |

SCIENCE & RESEARCH TEST-II

CODE: 2142

FINALS

Max. Marks : 40

Duration : 60 Mins.

General Instructions :

1. Please find the separate Answer Sheets along with the question paper.
2. Mention your Test Code, Student ID, Name, Class, Section, Contact no. and School Name on the Answer Sheet as per Question Paper and Hall Ticket.
3. This question paper contains VI sections, duration is 60 minutes.
4. Please read the instructions carefully before attempting the question.
5. Answer questions in Answer Sheet only.
6. Don't write or tick anything on the question paper.
7. Use only Black or Blue Ball Point Pen to answer the question in Answer Sheet.
8. Submit only answer sheet(s) to the invigilator.

SECTION - I

10 × 1/2 = 5m

DIRECTIONS: (1 -10) – Each question contains statements given in two columns which have to be matched. Statements in column A have to be matched with statements in column B and write in the answer sheet.

Column - A

- 1) Nitrogen
- 2) Air

Column - B

- A) liquid changes to vapour
- B) Physical change

- | | |
|--|-----------------------------|
| 3) Evaporation | C) Chemical change |
| 4) Breaking a stick | D) Gases |
| 5) Common salt | E) Interchangeable |
| 6) States of matter | F) Heating |
| 7) Separation of solid and liquid | G) Mixture of gases |
| 8) Ice turns to water | H) Solid |
| 9) Glass | I) Gas which is part of air |
| 10) They are compressible
and have no shape | J) Filtration |
| | K) Cooling |
| | L) Soluble in water |

SECTION - II**5 × 1 = 5m**

DIRECTIONS: (11 - 15) – Read the following statements and write your answer as true or false with reasons or solutions in the answer sheet.

11. Bacteria and fungi are not useful for soil.
12. Rain is a process of precipitation.
13. Air has weight but no shape.
14. Sun is the source of all energy.
15. Extra fats in our food can make us obese.

SECTION - III**5 × 1 = 5m**

DIRECTIONS : (16–20) – Complete the following statements with an appropriate word/term to be written in the answer sheet.

-
16. Pulses are rich in _____.
 17. Animals that live in water are called _____.
 18. Roots absorb _____ and _____ from the soil.
 19. A screw is a modified form of _____.
 20. In a battery the _____ energy converts to _____ energy.

SECTION - IV

5 × 2 = 10m

Answer the following Questions (21 - 25)

(Concept, Application, Skill based)

21. What are the three advantages of cooking?
22. (a) What do you know about the endangered animals?
(b) Give examples of 2 endangered species?
23. How will you define solute, solvent and solution?
24. A student took an unknown matter in a beaker. The matter took the shape of the beaker. Later he transferred the matter into a measuring cylinder. The matter took the shape of that cylinder but its volume remained the same.

a) What is the state of matter?

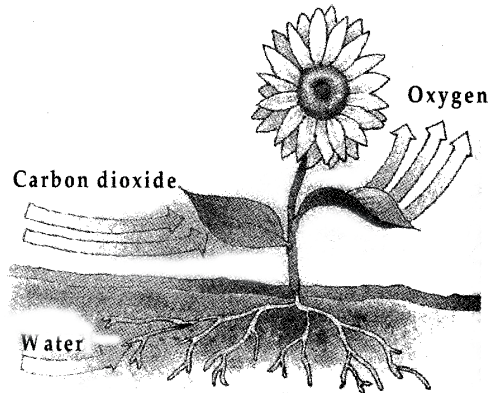
b) Which property of that state of matter is responsible here?
25. What is the difference between biodegradable and non-biodegradable wastes?

SECTION - V

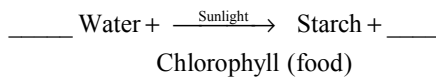
7 × 1 = 7m

Picture based question(26 - 32)

Study the given picture and answer the following questions.



26. Identify the process shown in the above diagram.
27. Name the gas taken by plants from air.
28. From where do plants take light and water.
29. Name the green pigment used by the plants.
30. Which gas is given out as a result of photosynthesis.
31. Fill the missing words :



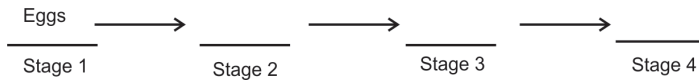
32. Which part of a plant is called food factory.

SECTION - VI

4 × 2 = 8m

Skill based questions(33 - 36)

33. Fill up the stages in the Life Cycle of a Butterfly.



34. Write the names of the animals given below under appropriate category:

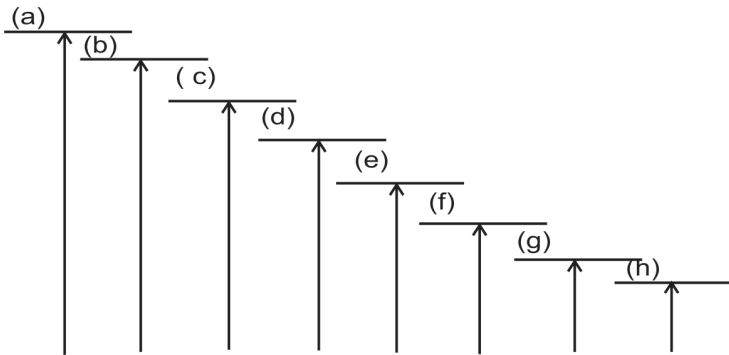
Frog, Beetle, Lizard, Vulture, Lion, Whale, Bat, Bug Snake,
Mosquito, Salamander,

Crocodile, Newt, Ostrich, Pigeon, Monkey, Butterfly, Elephant,
Crow.

MAMMALS	BIRDS	REPTILES	INSECTS	AMPHIBIANS

35. According to their height arrange these MAMMALS from tallest to shortest:

Elephant, Cat, Rat, Dog, Giraffe, Horse, Goat, Cow



36. Why is it suggested to take rest under the tree in day time but not at night?

SOLUTIONS TO MODEL PAPER - II**SECTION – I****Match the Following**

- 1) → I; 2) → G; 3) → A; 4) → B;
5) → L 6) → E; 7) → J; 8) → F;
9) → H; 10) → D

SECTION – II**True / False**

- 11) False 12) True
13) True 14) True
15) True

SECTION – III**Fill in the Blanks**

- 16) proteins
17) aquatic animals
18) Water, minerals
19) inclines plane
20) Chemical , electrical

SECTION – IV**Answer the following questions****(concept, Application, Skill based)**

21. Makes the food tasty

Makes the food soft and easy to digest

Kill harmful germs that may be present

22. a) There are many animals that have been hunted and killed to such an extent that their numbers have gone down drastically. These animals are known as endangered animals

b) Turtles, alligators

23. Solute is dissolved by solvent. to create a solution.

24. a) liquid

b) It has definite volume but not definite shape. It takes the shape of the container

25. Wastes that decompose easily by natural processes are biodegradable wastes. Wastes that do not easily by natural processes are non-biodegradable wastes.

SECTION – V**Picture based questions**

26. Photosynthesis

27. CO_2

28. Sun, soil

29. chlorophyll

30. O_2

31. $CO_2 + \text{Water} + \xrightarrow{\text{Sunlight}} \text{Starch} + O_2$
Chlorophyll (food)

32. Leaf

SECTION – VI

Skill based questions

33. $\frac{\text{Eggs}}{\text{Stage1}} \longrightarrow \frac{\text{Larva}}{\text{Stage2}} \longrightarrow \frac{\text{Pupa}}{\text{Stage3}} \longrightarrow \frac{\text{Butterfly}}{\text{Stage4}}$

34. **MAMMALS**: lion,whale, Bat, Monkey, Elephant

BIRDS : Vulture, Ostrich, Pigeon,Crow

REPTILES : Lizard, Snake,Crocodile

INSECTS : Beetle, Bug,Mosquito, Buterfly

AMPHIBIANS : Frog, Salamander,Newb

35. (a) Giraffe, (b) elphant,

(c) horse, (d) cow

(e) goat, (f) dog,

(g) cat, (h) rat

36. At night,plants cannot release O_2