



Dr. Bhasa Science

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Science 2016

Time allowed: 2hours 15 minutes

Index No:

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Candidate's Name.....

Candidate's signature.....

District Name.....

Read the following instructions carefully

1. This paper has two sections **A** and **B**. Section **A** has 50 questions and section **B** has 5 questions. The paper has 15 pages following altogether.
2. Answer all questions. All answers to both sections A and B must be **written** in the spaces provided.
3. All answers must be written using a blue or black ball-point pen or ink. **Any** work written in pencil other than graphs, pictures and diagrams will **not** be marked.
4. Unnecessary change of work may lead to loss of marks.
5. Any handwriting that cannot easily be read may lead to loss to marks.
6. Do not fill anything in the boxes indicated:
7. "For examiners". Use only and inside the question paper

FOR EXAMINERS USE ONLY		
Qn. No	MARKS	EXR'S NO.
1-10		
11-20		
21-30		
31-40		
51		
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53		
54		
55		
Total		

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SECTION A: 40 MARKS

Questions 1 to 40 carry one mark each

1. Name the gas used in fire extinguishers

Carbon dioxide

2. State the eye disease which is spread by house fly.

Trachoma

- Houseflies act as **mechanical carriers** of the bacteria *Chlamydia trachomatis*, which causes trachoma.
- Trachoma is a **contagious infection** that leads to inflammation of the eyelids, scarring, and—if untreated—can cause blindness.
- It is most common in areas with **poor sanitation and hygiene**, where flies breed and transmit the infection easily.

3. Which part of a fish perform a similar function as human ear?

Lateral line system

4. Name the male reproductive cell in flower

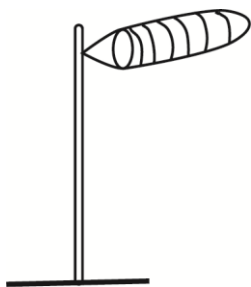
Pollen grain

5. Give any one way in which wood can be conserved.

Use firewood

Recycling paper

6. The diagram below is a of a weather instrument. Use it to answer the question that follows.



What is the use of this instrument at a weather station?

Shows **direction and relative strength of the wind**.

7. Which method of heat transfer enables a person to iron clothes using flat iron?

conduction

- **Conduction** is the transfer of heat through direct contact between molecules.
- In ironing, heat from the **hot metal surface of the flat iron** is transferred directly to the **fabric fibers**.
- This softens the fibers, removes wrinkles, and smooths the cloth.

8. Why should cold water be poured on the part of the body which has been scalded or burnt?

Reduces heat → Cold water absorbs and carries away the heat from the burn, preventing the injury from penetrating deeper into the skin.

Prevents further tissue damage → By cooling the area quickly, it limits the extent of cell destruction.

Relieves pain → The cooling effect numbs the nerves temporarily, reducing the burning sensation.

Reduces swelling and blistering → Cooling slows down inflammation and helps minimize blister formation.

Cleans the wound → Running water can wash away dirt and reduce the risk of infection.

9. Apart from decomposition, in which other way is soil formed?

Weathering of rocks

10. What is importance of smoke during the harvesting of honey?

Calms the bees

11. State the class of lever in which the effort is between the fulcrum and the load.

Third class lever

12. Give a reason why male anopheles mosquitoes do not transmit malaria parasites to human.

They **do not feed on blood** like female mosquitoes.

13. How can foot and mouth disease be controlled in cattle?

Vaccination

Quarantine and Movement Control: immediately isolate and quarantine infected animals

Maintain farm Hygiene and Biosecurity

Culling and Disposal (infected carcasses)

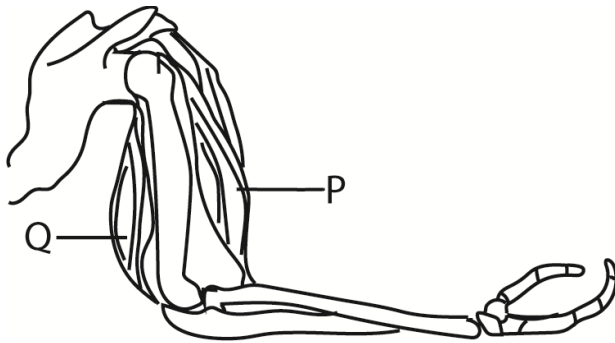
Public Awareness and Farmer Education

14. Give one way in which farmers can improve on the supply of nitrogen in the soil without use of artificial fertilizers

Planting legumes (beans, peas, groundnuts, or soybeans) to fix nitrogen

Using farm manure

The diagram below is of human arm. Study and use it to answer questions 15 and 16



15. Name muscle P

Biceps muscle

16. What happens to muscle Q when the arm is raised?

It relaxes

17. Which interstitial worm enters the human body through bare feet?

Hookworm: Hookworm larvae present in contaminated soil penetrate the skin, usually through bare feet.

18. How do plants use of the gas given out by animals during respirations?

Photosynthesis

19. State any one use of plane mirrors to people.

for seeing oneself during grooming.

20. Apart from helping in pollination, give other way in which wind is useful to plants.

Aid seed dispersal by wind

21. Which part of a maize grain has similar function as the cotyledon of a bean seed?

Endosperm stored nutrients.

22. State any one characteristic which shows that a bat is a mammal

Bats feed their young ones with milk from mammary glands.

Has fur

Has specialized teeth

23. Which blood cells carry oxygen in the body?

Red blood cell

24. Give any one reason why breastfeeding is encouraged for at least two years.

Breast milk provides essential nutrients and antibodies that strengthen the child's immunity

25. Name any **one** scale in which temperature is measures.

Celsius scale

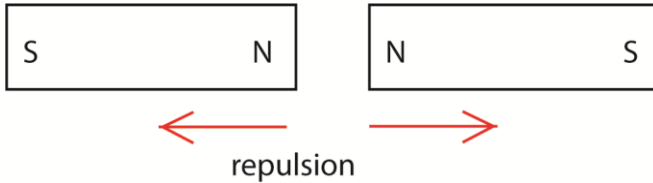
Fahrenheit scale

Kelvin scale

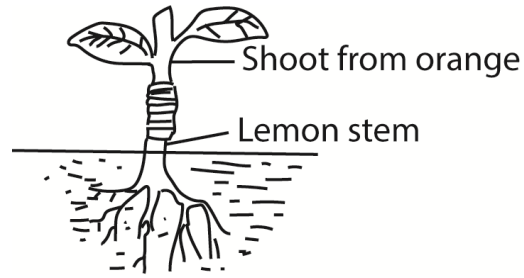
26. The diagram below shows two bar magnets placed close to each other. Use it to answer the question that follow.



Use arrows to show what happens to the two bar magnets



27. Name the human body system to which the lungs, kidneys and the skin belong.
Excretory system
28. Give one way in which bacteria in pit latrines are useful
Decompose feces
29. Name one disease that affects the stomach because of alcoholism
Ulcers, stomach cancer
30. Apart from the polio vaccine, name any other vaccine administered to children at 6 weeks of age.
BCG vaccine (against tuberculosis) or the **DPT vaccine** (against diphtheria, pertussis, and tetanus).
31. In which part of human alimentary canal is water absorbed.
Large intestines (colon)
32. What is the danger of having too much wax in the ear?
- **Reduced hearing (temporary hearing loss)** ?
 - **Earache or discomfort** due to pressure buildup
 - **Tinnitus (ringing in the ear)**
 - **Infections** if trapped wax encourages bacterial growth
33. What form of energy is produced by dry cells?
Electrical energy
34. Give any one good health habit that can improve the working of the lungs.
Regular physical exercise
35. Apart from eating a balanced diet, give any one other way of controlling common disease at home.
Practising hygiene
36. The diagram below shows a method of plant propagation. Use it to answer the question that follow.



Name the method of plant propagation shown in the diagram above

Grafting

37. Which organs are used by fish and tadpoles for breathing

Gills

38. Give any one secondary sex characteristic which is common to both adolescent boys and girls.

Armpit hair

Pubic hair

39. Name the fungi which normally grows on left over foods.

mould

40. What happens to light rays when they meet a convex lens?

They bend inwards or converge to the principal focus

SECTION B: 60MARKS

Questions 41 to 55 carry four marks each

41. (a) State any two ways in which vectors spread diseases to humans

(i) By biting and sucking blood: For example, mosquitoes transmit malaria parasites when they bite humans.

(ii) By contaminating food and water: For example, houseflies carry germs from dirty places and deposit them on food, leading to diseases like cholera and diarrhea.

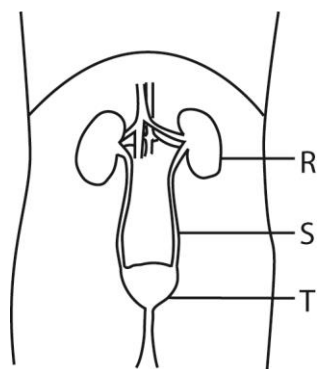
(b) Give any two ways of preventing vectors from spreading diseases to humans

(i) Proper disposal of wastes

(ii) Use of insecticides

(iii) Use of mosquito nets

42. The diagram below is the human urinary system and use it to answer the questions that follow



- (a) Name the parts marked S and T
- (i) S: **ureter**
- (ii) T: **urinary bladder**
- (b) What is the function of part marked R?

Excretion

Regulation of body water

- (c) Name any disease that affects the above system

Urinary tract system

43. In the table below, Part A shows some activities carried out by farmers and part B shows the effects of the activities

A Activities	B Effects
Irrigation Afforestation Mulching Crop rotation	<ul style="list-style-type: none"> - Preserves soil moisture - Leads to death of crop pests - Promotes convectional rainfall - Allows growth of crops in all seasons

Write the correct effect to the activity in the space provided below

- (i) Irrigation – allows growth of crops in all seasons
- (ii) Afforestation – promotes convectional rainfall
- (iii) Mulching – preserves soil moisture
- (iv) Crop rotation – leads to death of crop pests
44. (a) Give any two examples of non-renewable resources in the environment.
- (i) Coal
- (ii) Petroleum resource
- (iii) mineral
- (b) State any two ways of conserving non-renewable resource

- (i) **Using energy efficiently** ☑: Switching off lights and machines when not in use, and adopting energy-saving appliances reduces unnecessary consumption of coal, oil, and gas.

- (ii) **Recycling and reusing materials** ☒: Recycling metals, plastics, and glass reduces the need to extract and process new raw materials from non-renewable sources.

45. (a) To which group of plants do ferns and liverworts belong?

Lower plants

(b) How is the reproduction of ferns similar to that of liverwort?

By formation of spores

(c) Give two other plants that reproduce in the same way as ferns and liverworts

- (i) mosses
- (ii) Fungi
- (iii) mould

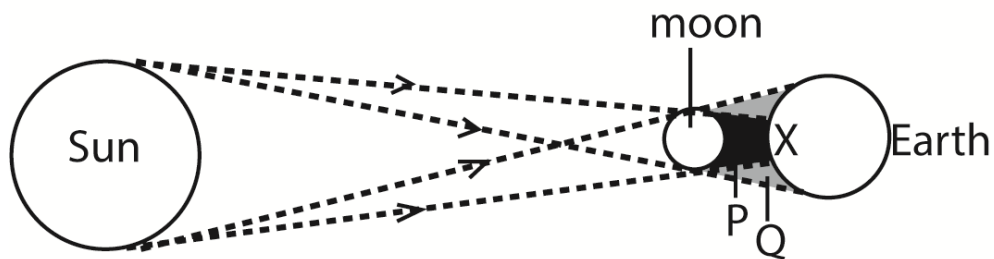
46. (a) Name the change of state which takes place when:

- (i) Vapour changes to liquid
Condensation
- (ii) A solid changes directly to gas
Sublimation

(b) Apart from causing change of state, give two other effects of heat on matter

- (i) **Expansion of matter**: When solids, liquids, or gases are heated, their particles move faster and spread apart, causing the material to expand. For example, railway tracks expand in hot weather.
- (ii) **Increase in temperature**: Heat raises the kinetic energy of particles, leading to a rise in temperature of the substance.
- (iii) **Decomposition**

47. The diagram below shows a type of eclipse. Study and use it to answer the questions that follow.



- (a) Name the type of eclipse shown in the diagram above
Eclipse of the sun
- (b) Name the shadows marked P and Q

- (i) P- umbra
- (ii) Q- penumbra
- (c) What happens to a person who would be in part X during eclipse?

He does not see the moon at all

48. (a) In which one way is each of the following elements of Primary Health Care(PHC) important to the community

(i) Water and sanitation

- **Prevention of waterborne diseases:** Safe water and proper sanitation reduce illnesses like cholera, typhoid, and diarrhea.
- **Improved hygiene practices:** Access to clean water enables hand washing, bathing, and food hygiene, which are essential for preventing infections.
- **Healthy environment:** Proper waste disposal and sanitation reduce breeding grounds for vectors (like mosquitoes and flies) that spread diseases.
- **Child survival and growth:** Clean water and sanitation lower child mortality rates and support healthy development.
- **Community productivity:** Healthy individuals miss fewer days of school or work, strengthening education and economic growth.

(ii) Maternal and child health

- **Reduces maternal and infant mortality:** Access to antenatal care, skilled birth attendants, and postnatal services prevents deaths during pregnancy and childbirth.
- **Promotes healthy child growth:** Immunization, nutrition programs, and early treatment of childhood illnesses ensure children grow strong and healthy.
- **Improves family health:** Healthy mothers are better able to care for their families, creating stronger households and communities.
- **Encourages preventive care:** Services like family planning, health education, and regular check-ups reduce risks before they become serious problems.
- **Strengthens community development:** When mothers and children are healthy, communities benefit from improved productivity, education, and long-term sustainability.
- **Equity in health services:** Prioritizing maternal and child health ensures vulnerable groups receive essential care, reducing inequalities.

(c) Give any two health care services which are provided through maternal and child health

- (ii) **Antenatal care services**
- (iii) **Immunization programs for children.**

49. (a) Name two systems of keeping poultry that enables a farmer to keep large number of birds

- (i) **Deep litter system:** Birds are kept on the floor of a house covered with litter material (like wood shavings or straw), which is managed to absorb droppings and maintain hygiene.
- (ii) **Battery cage system:** Birds are kept in cages arranged in tiers, allowing efficient space use and easy management of large flocks.

(b) State any two viral diseases that can spread easily in the above system of poultry keeping.

- (i) **Newcastle disease:** A highly contagious viral infection that affects the respiratory, nervous, and digestive systems of birds.
- (ii) **Avian influenza (bird flu):** A viral disease that spreads rapidly among poultry, causing high mortality and economic losses.

50. (a) Give any one characteristic which is common to all invertebrates

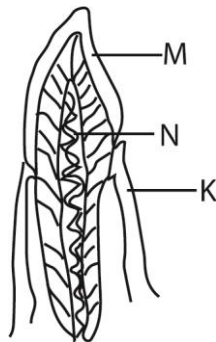
(b) To which group of invertebrate does each of the following animal belong

- (i) Snail: Molluscs
- (ii) Grasshopper: Arthropods/insects

(b) State one way in which snails may be dangerous to human

Snails transmit the parasite that causes **schistosomiasis (bilharzia)**.

51. The diagram below shows a section through a human tooth. Study and use it to answer the question that follow



(a) Name the parts marked M and K

- (i) M- enamel
- (ii) K - gum

(b) Which mineral salt helps to form part M?

Calcium and phosphorus

(c) Give the function of the part labeled N

Supplies the tooth with nutrients and oxygen

52. (a) State the method that can be used to separate:

- (i) Fruit seeds in the juice
Filtration
- (ii) Millet seeds mixed with husks
Winnowing

(b) Give the importance of the following steps in cleaning clothes at home

(i) Sorting:

- **Prevents color transfer:** Separating dark-colored clothes from light ones avoids staining (e.g., a red shirt bleeding onto white clothes).
- **Protects fabric types:** Sorting delicate fabrics (like silk or wool) from heavy ones (like jeans or towels) prevents damage during washing.
- **Improves washing effectiveness:** Grouping heavily soiled clothes separately ensures they get more thorough cleaning without spreading dirt to lightly soiled items.
- **Maintains hygiene:** Separating undergarments, baby clothes, or kitchen towels from regular wear reduces the spread of germs.
- **Extends clothing life:** Proper sorting reduces wear and tear, keeping clothes looking new for longer.

(ii) Soaking:

- **Loosens dirt and stains:** Soaking allows water and detergent to penetrate fabric fibers, softening stubborn dirt and stains.
- **Reduces effort in washing:** Clothes require less scrubbing or machine agitation after soaking, saving time and energy.
- **Improves detergent action:** Detergent dissolves better and works more effectively when clothes are soaked beforehand.
- **Prevents damage to fabric:** Gentle soaking reduces the need for harsh scrubbing, protecting delicate fabrics.
- **Enhances hygiene:** Soaking helps kill germs and remove sweat or odors, especially in heavily soiled clothes.

53. (a) Write down any two examples of anti-social behavior in our communities

- (i) **Drug and alcohol abuse:** This often leads to crime, violence, and breakdown of families.
- (ii) **Theft and robbery:** Stealing property disrupts peace, causes fear, and weakens trust among community members.
- (iii) **Fighting**
- (iv) Abusing others
- (v) Domestic violence

(b) State any two ways of controlling anti-social behavior in our communities

- (i) **Community education and awareness:** Teaching people about the dangers of crime, drug abuse, and violence helps prevent such behaviors.
- (ii) **Law enforcement and justice systems:** Strong policing and fair punishment discourage individuals from engaging in anti-social acts.
- (iii) **Youth empowerment programs:** Providing education, skills training, and employment opportunities reduces idleness and crime among young people.
- (iv) **Counseling and rehabilitation:** Supporting individuals involved in anti-social behavior through counseling and rehabilitation helps them reform.
- (v) **Promoting positive values:** Encouraging respect, honesty, and cooperation through cultural, religious, and social institutions strengthens community bonds.

54. (a) Apart from using solfa notation, mention any two other ways of storing sound

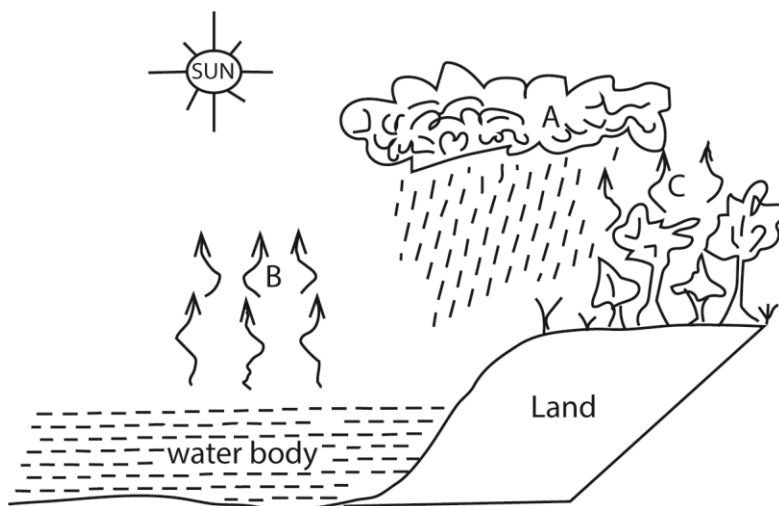
Staff notation

Digital recording on Cd, in computer, memory cards .

(b) Name two instrument used to reproduce sound stored by solfa notation

- (i) **Piano/Keyboard:** Notes written in solfa notation can be played directly on the keys to produce sound.
- (ii) **Recorder/Flute:** Wind instruments like the recorder or flute can reproduce the pitches indicated in solfa notation.
- (iii) **Guitar**

55. The diagram below shows the water cycle. Study and use it to answer the questions that follow



(a) Name the type of clouds represented by letter A

Nimbus cloud

- (b) State the processes taking place at B and C
 - (i) B- evaporation
 - (ii) C - transpiration
- (a) What is the importance of the sun in the above diagram?
Provides heat for evaporation