





















### NOF SCIENCE CHAMPIONS LEAGUE



CLASS 6

**PRACTICE SAMPLE PAPERS** 

**4 SETS OF 40 QUESTIONS EACH** 

### FREQUENTLY ASKED QUESTIONS



#### What is the NOF Champions League?

The NOF Champions League is the most prestigious and highly anticipated competitive exam of the year. This is a paid Level 2 exam where the top students from each country compete against one another.

### Who qualifies for the NOF Champions League?

All students who have secured A++ and A+ grades are eligible to participate in the NOF Champions League.

### Can any student who pays the fee participate?

NOF Champions League is an INVITATION ONLY event. Only students who have secured A++ and A+ in any subject qualify for that specific subject.

### Students from which classes can participate?

Students from Nursery to Grade 10 can participate.

#### What is the syllabus for the exam?

The syllabus remains the same as it was for Level 1.

#### How can a child prepare for the Champions League?

Practice question papers will be provided FREE to every participant in the form of an e-booklet. Each e-booklet contains 4 sets of question papers, with 40 questions in each set. The e-booklet will be sent to the child on his/her registered email ID with NOF.

#### Will there be any negative marking?

Yes, +4 for a Correct and -1 for a Wrong Answer.

#### Is it mandatory to appear for this exam?

If you want to receive the NCL medal then you have to appear for the examination

### Where will the exam be conducted?

It will be an online exam, and students can take it from home using any device (PC/laptop/tablet/mobile phone) with an active front camera.

All the best

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- Q 1. Assertion: Proteins are the body's primary source of energy. Reason: Carbohydrates provide energy and proteins are used for muscle repair.
- **A.** Both Assertion and Reason are correct, and Reason is the correct explanation of Assertion.
- **B.** Both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
- **C.** Assertion is correct, but Reason is incorrect.
- **D.** Both Assertion and Reason are incorrect.
- Q 2. If you are planning a balanced meal, which of the following combinations would be the most suitable?
- A. Rice, fish, and salad
- **B.** Cake, ice cream, and soft drink
- **C.** Potato chips, burger, and soda
- **D.** Rice, beans, and cookies
- Q 3. Observe the following image showing a plate of food with various items. Which of these food items are sources of carbohydrates?
- A. Pineapple and broccoli
- B. Rice and Bread
- **C.** Chicken and beans
- **D.** Milk and eggs



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- Q 4. A farmer grows several crops on his land. He grows wheat, maize, pulses, and vegetables. After harvesting, he stores them in separate bins. He also feeds some of the crops to his livestock. Which of the following food items can be categorized as a source of protein from the farmer's crops?
- **A.** Wheat
- B. Maize
- C. Pulses
- **D.** Vegetables
- Q 5. While preparing an electric circuit for a science project Sanvi completed the circuit using a copper wire. Why are metals good conductors of heat and electricity?
- **A.** They have a high density.
- **B.** They have a shiny appearance.
- **C.** They have free electrons that can move easily.
- **D.** They are malleable and ductile.
- Q 6. During an experiment, you need to separate iron filing from sulphur. How can you separate a mixture of iron filings and sulfur powder?
- **A.** By adding water and filtering
- **B.** By heating the mixture
- **C.** By using a magnet
- **D.** By dissolving the mixture in water



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Q 7. Which material is most likely to corrode over time?



A



В.



D

Q 8. During a beach cleanup, volunteers collect a mixture of sand and plastic waste. Which separation method is suitable for isolating plastic from sand?

A. Filtration

B. Sieving

**C.** Handpicking

**D.** Magnetic separation

Q 9. During a school experiment, you observe that a fabric catches fire quickly and burns completely. What type of fabric is this likely to be?

- A. Nylon
- B. Silk
- C. Polyester
- **D.** Cotton



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### Q 10. Why are polyester fibres preferred for making raincoats?

- **A.** They are waterproof. **B.** They are shiny.
- **C.** They absorb water. **D.** They are biodegradable.

# Q 11. Riya spilled some water on her silk scarf. She observed that the water stayed on the surface for some time. Why did this happen?

- **A.** Silk is waterproof.
- **B.** Silk is a protein-based fibre and repels water.
- **C.** Silk is woven tightly, preventing water absorption.
- **D.** Silk is lightweight.

## Q 12. Sacculent plant has thick stems that store water. This adaptation helps the plant to:

- **A.** absorb water quickly during rains.
- **B.** reduce water loss due to evaporation.
- **C.** make food during the night.
- **D.** protect itself from animals.

### Q 13. Which of the following statements about adaptations is incorrect?

- **A.** Adaptations help organisms survive in their environment.
- **B.** Adaptations are always physical changes.
- **C.** Adaptations can be behavioral or structural.
- **D.** Adaptations are inherited from parents.



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## Q 14. A bird has sharp claws and a strong beak, which helps it to catch its prey. This is an example of an adaptation for:

- A. Communication
- B. Building nest
- C. Feeding
- **D.** Movement

### Q 15. Desert animals are to water conservation as aquatic animals are to:

- **A.** Speed
- **B.** Salt regulation
- **C.** Oxygen absorption through gills
- **D.** Temperature control

## Q 16. Old people often struggles to bend her knees due to pain. Which part of the skeletal system is likely affected?

- A. Ligaments
- **B.** Tendons
- C. Joints
- **D.** Muscles

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## Q 17. Assertion: The backbone is made up of several small bones called vertebrae.

Reason: The vertebrae do not allow flexibility and movement due to fixed joint in the spine.

- **A.** Both Assertion and Reason are correct, and Reason is the correct explanation of Assertion.
- **B.** Both Assertion and Reason are correct, but Reason is not the correct explanation of Assertion.
- **C.** Assertion is correct, but Reason is incorrect.
- **D.** Both Assertion and Reason are incorrect.

## Q 18. A person is suffering from joint pain and stiffness. Which type of doctor should they consult?

- A. Cardiologist
- B. Dermatologist
- C. Orthopedist
- D. Neurologist

## Q 19. A person is lifting a heavy box. Which joint in their body helps in the bending of the elbow as they lift the box?

- A. Gliding joint
- B. Hinge joint
- **C.** Pivot joint
- **D.** Ball and socket joint



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Q 20. A student uses a mirror, a shiny metal surface, and a piece of rough fabric to reflect light.

Which surface will reflect light the best?

**A.** Mirror **B.** Metal surface

**C.** Rough fabric **D.** Water

Q 21. A flashlight is placed at different angles in front of a mirror. What will happen to the angle of reflection as the flashlight's angle increases?

- **A.** The angle of reflection will decrease.
- **B.** The angle of reflection will remain unchanged.
- **C.** The angle of reflection will increase.
- **D.** The angle of reflection will stop changing.

## Q 22. A person stands in front of a bright light source. A shadow is formed behind them.

What can we infer about the size of the shadow if the light source is moved farter to the person?

- **A.** The shadow becomes larger.
- **B.** The shadow becomes smaller.
- **C.** The shadow disappears.
- **D.** The shadow remains the same size.

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Q 23. The image shows a person standing in front of a light source at different distances. What happens to the size of the shadow as the person moves closer to the light source?





- **A.** The shadow becomes larger.
- **B.** The shadow becomes smaller.
- **C.** The shadow disappears.
- **D.** The shadow remains the same size.

Q 24. A car travels 60 km in the first hour, 50 km in the second hour, and 40 km in the third hour. What type of motion does the car exhibit?

- A. Uniform motion
- B. Non-uniform motion
- **C.** Oscillatory motion
- **D.** Circular motion



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## Q 25. If a car maintains uniform motion and covers 360 km in 6 hours, how far will it travel in 9 hours?

**A.** 360 km **B.** 540 km **C.** 720 km **D.** 1080 km

### Q 26. An object covers equal distances in equal intervals of time.

### This motion is classified as:

- A. Non-uniform motion
- B. Oscillatory motion
- **C.** Circular motion
- **D.** Uniform motion

### Q 27. Which group contains only standard units of measurement?

- A. Meter, gram, second
- B. Hand span, meter, kilogram
- C. Footstep, gram, liter
- D. Cubit, kilogram, second

## Q 28. Why does a compass needle deflect when placed near a current-carrying wire?

- **A.** The wire repels the compass needle.
- **B.** The electric current produces a magnetic field.
- **C.** The compass aligns with the electric field.
- **D.** The compass loses its magnetic properties.



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### Q 29. Why are circuit breakers used in homes?

- **A.** To increase voltage
- **B.** To prevent short circuits and overloads
- **C.** To generate electricity
- **D.** To control magnetic fields

## Q 30. Identify the odd one out based on how they conduct electricity:

A. Iron nailB. Copper wireC. Rubber bandD. Steel spoon

#### Q 31. Battery is to energy as magnet is to:

A. ForceB. Electric currentC. AttractionD. Magnetic field

### Q 32. Assertion: Evaporation is a reversible change.

Reason: Water can be obtained back from vapour by condensation.

- **A.** Both Assertion and Reason are true, and Reason explains Assertion.
- **B.** Both Assertion and Reason are true, but Reason does not explain Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Both Assertion and Reason are false.



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## Q 33. A steel bridge is painted regularly to prevent rusting. The paint acts as:

- **A.** a catalyst for rusting.
- **B.** a barrier to moisture and oxygen.
- **C.** a conductor of heat.
- **D.** a chemical to speed up rusting.

## Q 34. A picture shows a lump of clay being molded into a pot. This is an example of:



- A. Reversible change
- **B.** Irreversible change
- C. Natural change
- **D.** Periodic change

### Q 35. Identify the mismatch in the following pairs:

- **A.** Rusting of iron Chemical change
- **B.** Freezing of water Irreversible change
- **C.** Stretching of rubber Physical change
- **D.** Cooking of food Irreversible change



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### Q 36. Seed is to plant as egg is to:

- A. Bird
- **B.** Animal
- C. Ecosystem
- **D.** Bats

## Q 37. If predators are removed from an ecosystem, what might happen to herbivores?

- A. Herbivore population will decrease
- **B.** Herbivore population will increase
- **C.** No effect on herbivores
- **D.** More biodiversity

# Q 38. You observe a forest scene in an image where animals, trees, and a river coexist. Which of the following correctly defines this area?

- A. Biome
- B. Habitat
- C. Ecosystem
- D. Community

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Q 39. A student is sorting objects based on their properties. She groups items as follows:

Group A: Stone, Metal, Brick Group B: Cotton, Feather, Wool

Group C: Water, Oil, Milk

What is the basis of her categorization?

**A.** Weight **B.** State of matter

**C.** Density **D.** Hardness and softness

Q 40. Radha kept fruits in a refrigerator and noticed they stayed fresh longer than those left on the kitchen counter.

Assertion: Refrigeration slows down food spoilage.

Reason: Low temperatures inhibit the growth of microorganisms.

- **A.** Both Assertion and Reason are true, and Reason explains Assertion.
- **B.** Both Assertion and Reason are true, but Reason does not explain Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Both Assertion and Reason are false.

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### **ANSWER KEY**

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
С	Α	В	С	С	С	В	С	D	Α
11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
С	В	В	С	С	С	С	С	В	Α
21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
С	В	Α	В	В	D	A	В	В	С
31.	32.	33.	34.	35.	36.	37.	38.	39.	40.
D	Α	В	A	В	Α	В	С	D	Α



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- Q 1. Match the nutrient with its function:
- 1.Proteins
- 2. Carbohydrates
- 3.Fats
- 4. Vitamins
- A) Energy source
- B) Muscle growth and repair
- C) Regulate body processes
- D) Insulation and energy
- **A.** 1-D,2-A,3-C,4-B
- **B.** 1-C,2-B,3-D,4-A
- **C.** 1-B,2-A,3-D,4-C
- **D.** 1-D,2-B,3-A,4-C
- Q 2. The image shows a child with a deficiency disease. Based on the symptoms (pale skin, weakness), which nutrient is the child likely missing?
- A. Vitamin C
- B. Vitamin D
- C. Iron
- **D.** Protein
- Q 3. Which food item below is rich in proteins?
- A. Fruit
- **B.** Egg
- **C.** Wheat
- D. Milk



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- Q 4. A diet high in fats and low in carbohydrates is generally recommended for a person who needs quick energy. What could be a potential drawback of this diet?
- **A.** Excessive energy storage
- **B.** Low protein intake
- **C.** Increased risk of vitamin deficiency
- **D.** Decreased energy availability
- Q 5. Aman wants to build a water storage tank. He is considering using materials like plastic, iron, and wood. Which material should he choose and why?
- **A.** Wood, because it is eco-friendly.
- **B.** Plastic, because it is non-porous and does not rust.
- **C.** Iron, because it is strong and durable.
- **D.** None of these, as all are unsuitable for water storage.
- Q 6. Which of the following statements about separation techniques are correct?
- i) Filtration is used to separate mixtures of solids and liquids.
- ii) Distillation is used to separate mixtures of liquids with different boiling points.
- iii) Evaporation is used to separate mixtures of solids and gases.
- iv) Handpicking is used to separate solids from solids.
  - **A.** ii, iii **B.** i, iv
- **C.** i, ii, iv
- **D.** All of these



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### Q 7. A pressure cooker is being used to cook food on a gas stove.

## Which property is most critical for the material of the utensil?

- **A.** Malleability
- **B.** Elasticity
- **C.** Density
- **D.** Thermal conductivity



## Q 8. A mixture of iron filings and sulfur powder needs to be separated. Which method should be used, and why?

- **A.** Decantation, because it separates heavier particles from lighter ones.
- **B.** Sieving, because it separates particles of different sizes.
- **C.** Magnetic separation, because iron is magnetic and sulfur is not.
- **D.** Filtration, because it removes impurities from a liquid.

## Q 9. Silk is considered a luxurious fabric. Which of the following processes explains why silk is expensive?

- **A.** Silk extraction is done by hand.
- **B.** The threads are delicate.
- **C.** The fibres are rare in nature.
- **D.** It requires rearing of silkworms and careful processing.

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## Q 10. Neha's grandmother prefers woollen clothes during winter. What property of wool makes it suitable for cold weather?

- **A.** Wool absorbs moisture.
- **B.** Wool is a good conductor of heat.
- **C.** Wool traps air, providing insulation.
- **D.** Wool is lightweight.
- Q 11. Anil wants to make strong and durable ropes for his farm. Which of the following materials is most suitable for this purpose?
- **A.** Jute **B.** 
  - . Nylon
- C. Silk
- **D.** Linen
- Q 12. You notice that your dog runs when you take its leash. What characteristic of living organisms is being shown by the dog?
- **A.** Response
- B. Movement
- **C.** Growth
- **D.** Circulation
- Q 13. In a tropical rainforest, the trees grow very tall. This is mainly

to:

- **A.** Capture more sunlight for photosynthesis
- **B.** Escape from predators
- **C.** Store food and water in leaves
- **D.** Attract pollinators

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# Q 14. After exercising and moving outdoors, we often feel thirsty. Which of the following organ systems regulates the balance of water in the body?

- **A.** Muscular system
- B. Respiratory system
- **C.** Circulatory system
- **D.** Excretory system

### Q 15. Assertion: Penguins have tightly packed feathers.

Reason: This helps them to swim faster in water.

- **A.** Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
- **B.** Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Assertion is false, but Reason is true.

## Q 16. When a person pulls up weight, which muscles are primarily involved in straightening the arms?

- A. Hamstrings
- **B.** Triceps
- C. Biceps
- D. Quadriceps



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# Q 17. A person is climbing a ladder. The movement of the legs while stepping on each rung involves the flexion and extension of which joints?

- **A.** Hinge joint (knee) and ball-and-socket joint (hip)
- **B.** Pivot joint (ankle) and ball-and-socket joint (shoulder)
- **C.** Hinge joint (knee) and gliding joint (wrist)
- **D.** Ball-and-socket joint (shoulder) and fixed joint (skull)

### Q 18. Which of the following bones is part of the arm?

- A. Femur
- B. Clavicle
- **C.** Radius
- D. Scapula

# Q 19. A person notices that their knee is stiff and painful, particularly after sitting for long periods. What is likely to be the cause of this stiffness?

- **A.** Overuse of the muscles
- **B.** Excessive growth of muscles
- **C.** Lack of physical exercise
- **D.** Limited movement in the knee joint due to lack of lubrication



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## Q 20. A person holds an object in front of a light source. The shadow formed is very large.

Which of the following changes would reduce the size of the shadow?

- **A.** Moving the object closer to the light source
- **B.** Moving the object farther from the light source
- **C.** Using a larger light source
- **D.** Making the object larger

### Q 21. A person stands in front of a lamp.

Which of the following scenarios best demonstrates the formation of a shadow similar to the one formed by the person?

- **A.** A bird flying under the sun
- **B.** A curtain moving in the wind
- **C.** A person in front of a bright screen
- **D.** A tree casting a shadow in the evening

### Q 22. Which of the following is true about the reflection of light?

- **A.** Light always reflects at a 90-degree angle.
- **B.** The angle of incidence equals the angle of reflection.
- **C.** The reflection is always distorted.
- **D.** Reflection can only occur from shiny surfaces.



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### Q 23. Match the objects with their uses based on reflection:

**Object A: Mirror** 

Object B: Water surface
Object C: Polished steel
Object D: Rough wood

### Which object would provide the clearest reflection?

A. Object A: Used for seeing oneself
B. Object B: Used for making mirrors
C. Object C: Used for reflecting sunlight
D. Object D: Used for seeing clear images

## Q 24. An image shows a clock with a second hand moving. What type of motion does the second hand exhibit?

- A. Linear motion
- B. Oscillatory motion
- **C.** Circular motion
- **D.** Random motion

## Q 25. Why do we use kilometers instead of meters to measure long distances, such as between two cities?

- A. Meters are not suitable for large distances
- **B.** To make the calculations easier
- **C.** To confuse people
- **D.** To reduce the number of digits



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## Q 26. Why are hand spans or footsteps not reliable for measuring distances?

- **A.** They vary from person to person.
- **B.** They require a lot of effort.
- **C.** They are outdated methods.
- **D.** They are not commonly taught in schools.

### Q 27. Identify the correct pair of measuring tool and application:

- **A.** Measuring tape Volume of water
- **B.** Measuring cylinder Length of a book
- **C.** Stopwatch Duration of a race
- **D.** Ruler Capacity of a bottle

### Q 28. Identify the mismatch in the following pairs:

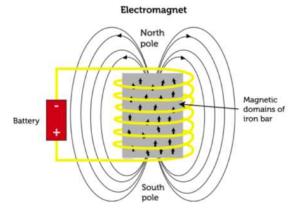
- **A.** Bar magnet Permanent magnet
- **B.** Copper wire Magnetic material
- **C.** Compass Detects magnetic field
- **D.** Iron nail Temporary magnet



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## Q 29. An electromagnet is shown in the image. To make it stronger, you should:



- **A.** Use a wooden core
- **B.** Increase the number of coils
- **C.** Reduce the current
- **D.** Use thinner wires

## Q 30. The image shows a compass needle pointing towards a specific direction. This happens because the compass:

- **A.** Is repelled by the Earth
- B. Aligns with Earth's magnetic field
- **C.** Is affected by gravity
- **D.** Rotates randomly



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## Q 31. Assertion: A freely suspended bar magnet always aligns in the north-south direction.

Reason: Earth itself behaves like a giant magnet.

- **A.** Both Assertion and Reason are true, and Reason explains Assertion.
- **B.** Both Assertion and Reason are true, but Reason does not explain Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Both Assertion and Reason are false.

## Q 32. The image shows a candle being lit. Which changes occur in this process?

- A. Chemical change only
- **B.** Physical change only
- **C.** Both physical and chemical changes
- **D.** Neither physical nor chemical change

## Q 33. Case: A blacksmith heats iron to bend it into tools. This is an example of:

- A. Periodic change
- **B.** Physical change
- **C.** Irreversible change
- **D.** Chemical change





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### Q 34. Which of the following changes is different from the rest?

A. Melting of iceB. Freezing of waterBurning of paperBoiling of water

## Q 35. Which of the following statements about chemical changes are correct?

they produce new substances.

they are reversible.

they often involve a change in energy.

they never produce heat.

A. 1 and 3B. 2 and 4C. 1 and 4D. 3 and 4

### Q 36. Match the following types of pollution with their sources:

- **1.Air Pollution**
- 2.Water Pollution
- 3.Soil Pollution
- **4.Noise Pollution**
- A) Loudspeakers
- B) Smoke from factories
- C) Pesticides
- D) Oil spills

**A.** 1-B,2-D,3-C,4-A **B.** 1-C,2-B,3-D,4-A **C.** 1-A,2-D,3-C,4-B **D.** 1-D,2-B,3-A,4-C



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## Q 37. A city experiences smog frequently. Which measures can reduce smog formation?

- **A.** Reduce the use of vehicles
- **B.** Plant more trees
- **C.** Use cleaner fuels
- **D.** All of the above

## Q 38. Identify the odd one out in terms of natural sources of energy.

- A. Sun
- B. Wind
- C. Coal
- **D.** Water

## Q 39. During a science experiment, a group of students classify substances based on their ability to conduct heat:

**Group X: Iron rod, Copper wire, Aluminum sheet** 

Group Y: Plastic cup, Woolen cloth, Wooden stick

Which of the following describes the groups correctly?

- **A.** Group X: Conductors, Group Y: Insulators
- **B.** Group X: Insulators, Group Y: Conductors
- **C.** Both are Conductors
- **D.** Both are Insulators

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Q 40. A class conducts an experiment where they mix oil and water in a beaker and stir vigorously. After some time, they observe: Oil floats on water, forming a layer.

What is the best explanation for this behavior?

- **A.** Oil is denser than water.
- **B.** Oil is less dense than water.
- **C.** Water repels oil molecules.
- **D.** Oil dissolves in water.

### **ANSWER KEY**

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
С	С	В	Α	В	С	D	С	D	С
11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
В	Α	Α	D	В	В	Α	С	D	В
21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
D	В	Α	С	D	Α	С	В	В	В
31.	32.	33.	34.	35.	36.	37.	38.	39.	40.
Α	С	В	C	A	A	D	С	Α	В



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### Q 1. Which of the following foods should be categorized as a source of fats?

A. ButterB. AppleC. RiceD. Potato

# Q 2. Case: You are designing a diet plan for a marathon runner. Which of the following foods should be included in their diet to provide energy for the race?

A. Rice and nutsB. Spinach and nutsC. Rice and spinachD. Nuts and spinach

### Q 3. Which of the following does not belong with the others?

- A. Carrot
- B. Spinach
- C. Potato
- **D.** Apple

## Q 4. Categorize the following foods as either a source of carbohydrates or proteins: Wheat, Milk, Eggs, Rice.

A. Carbohydrates: Wheat, Milk; Proteins: Rice, Eggs

**B.** Carbohydrates: Wheat, Rice; Proteins: Milk, Eggs

**C.** Carbohydrates: Wheat, Rice; Proteins: Wheat, Eggs

**D.** Carbohydrates: Milk, Rice; Proteins: Wheat, Eggs

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- Q 5. A chemist wants to purify a sample of sea water to obtain pure water. Which separation technique should she use?
- A. FiltrationB. DistillationC. SievingD. Evaporation
- Q 6. Why is filtration not suitable for separating a mixture of salt and water?
- **A.** Salt dissolves in water.
- **B.** Salt and water have different densities.
- **C.** Salt and water have different boiling points.
- **D.** Salt and water have different colors.
- Q 7. Sanya wants to pack her lunch in a container. Which material should she choose to ensure her food remains fresh for a longer time?
- A. Cotton bagB. Steel containerC. Paper bagD. Glass container
- Q 8. A magnet is used to separate a mixture of materials. Which of the following pairs can be separated using this method?
- A. Sand and salt
- **B.** Copper and aluminum
- **C.** Iron nails and wood chips
- **D.** Sugar and water



## NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

Q 9.	Rahul's clothes became wet during a rainstorm. Later, he
notic	ed his cotton shirt dried faster than his woolen sweater. What
prop	erty of cotton makes this possible?

**A.** Absorbs more water

**B.** Dries quickly

**C.** Retains heat

**D.** Soft

Q 10. A farmer grows jute plants for fibre. What is the next step to extract fibre from the plant stems after harvesting?

A. Spinning

B. Retting

**C.** Weaving

**D.** Ginning

Q 11. A sportsperson is choosing a fabric for their sportswear. Which type of fibre would be most suitable, considering factors like moisture-wicking and durability?

- A. Silk
- B. Wool
- C. Linen
- **D.** Polyester

### Q 12. Why do plants in deserts have deep roots?

- A. To reach deeper layers of soil for water
- **B.** To store food
- **C.** To absorb more sunlight
- **D.** To protect themselves from animals

# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

## Q 13. A polar bear has thick fur and a layer of fat under its skin. Why are these features important for its survival?

- **A.** They help the bear move easily in water.
- **B.** They provide insulation in cold environments.
- **C.** They make the bear appear larger to predators.
- **D.** They reduce the need for the bear to eat.

## Q 14. Ramesh observed a lizard shedding its skin. Which characteristic of living organisms does this demonstrate?

A. RespirationB. GrowthC. ReproductionD. Excretion

## Q 15. During a nature walk, Priya found mushrooms growing on a dead log. How do these mushrooms obtain their nutrition?

- **A.** Photosynthesis **B.** parasitism
- **C.** Symbiosis **D.** Saprophytic nutrition

### Q 16. Why do athletes need to warm up before exercise?

- **A.** To increase heart rate.
- **B.** To prevent injuries.
- **C.** To increase blood flow to muscles.
- **D.** All of the above.

# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

## Q 17. A person is experiencing severe pain when bending their knees after sitting for a long time. This pain is most likely due to:

- **A.** Inflammation of the hinge joint at the knee
- **B.** A broken bone in the knee
- **C.** Damage to the ball-and-socket joint of the hip
- **D.** Strain on the gliding joint of the ankle

## Q 18. A bird's lightweight body helps it in flying. Which part of its body contributes most to this feature?

- A. Feathers
- B. Hollow bones
- C. Beak
- **D.** Neck

### Q 19. Identify the mismatch.

- A. Cartilage Flexible tissue
- B. Skull Pivot joint
- **C.** Tendons Connect bone to muscle
- **D.** Ligaments Connect bone to bone



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 20. A student observes the behavior of light on different surfaces:

Surface A: Smooth and shiny Surface B: Rough and uneven

**Surface C: Transparent Surface D: Translucent** 

### Which surface will give the clearest reflection of light?

A. Surface AB. Surface BC. Surface CD. Surface D

## Q 21. A student sets up a mirror at an angle to reflect light onto a surface.

### What will happen if the angle of incidence is increased?

- **A.** The light will reflect at the same angle.
- **B.** The light will change direction randomly.
- **C.** The angle of reflection will also increase.
- **D.** The light will not reflect at all.



# NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

Q 22. The following objects are placed in front of a bright light

source:

Object A: A ball

Object B: A transparent glass sheet

Object C: A wooden block Object D: A thick book

Which object will form the least distinct shadow?

A. Object AB. Object BC. Object CD. Object D

Q 23. A student uses a flashlight and a screen to study the formation of shadows. The screen is placed 1 meter from the light source.

If the distance between the object and the screen is increased, what will happen to the shadow?

- **A.** The shadow becomes smaller.
- **B.** The shadow becomes sharper.
- **C.** The shadow becomes larger.
- **D.** The shadow disappears.



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 24. Motion of a train is to linear motion as motion of a pendulum is to:

- **A.** Non-uniform motion
- **B.** Circular motion
- **C.** Oscillatory motion
- **D.** Random motion

### Q 25. An image shows a cyclist pedaling uphill. What type of motion is observed in the wheels?



- A. Uniform and oscillatory motion
- **B.** Circular and oscillatory motion
- C. Linear and circular motion
- **D.** Linear and periodic motion



# NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

### Q 26. Match the following units with their corresponding quantities:

**Kilometer** 

Second

**Kilogram** 

Meter

- A. Time, Length, Mass, Length B. Length, Time, Mass, Length
- C. Mass, Time, Length, Mass D. Length, Mass, Time, Mass

### Q 27. Assertion: A measuring cylinder is used to measure the volume of liquids.

Reason: Measuring cylinders provide accurate and standard measurements.

- A. Both Assertion and Reason are true, and Reason explains
- **B.** Both Assertion and Reason are true, but Reason does not explain Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Both Assertion and Reason are false.

#### Q 28. Identify the group that consists only of magnetic materials:

- **A.** Steel, copper, aluminum
- **B.** Iron, nickel, cobalt
- **C.** Plastic, silver, iron
- **D.** Wood, steel, rubber



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 29. What happens when two south poles of bar magnets are brought close?

- **A.** They attract each other.
- **B.** They form a stronger magnet.
- **C.** They cancel out each other's magnetic fields.
- **D.** They repel each other.

### Q 30. A battery is connected to a bulb using wires. The bulb does not glow. This could happen because:

- **A.** The circuit is open
- **B.** The wires are made of copper
- **C.** The bulb is placed too far away
- **D.** The battery is new

### Q 31. A student connects a bar magnet to a stack of paper clips. What observation can be made?

- **A.** The magnet repels the paper clips.
- **B.** The paper clips stick to the magnet.
- **C.** The magnet loses its magnetic property.
- **D.** The paper clips turn into magnets permanently.



# NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

### Q 32. Classify the following as fast or slow changes: Ripening of fruits, rusting of iron, burning of a matchstick, melting of ice

- **A.** Fast: Burning of a matchstick, melting of ice | Slow: Ripening of fruits, rusting of iron
- **B.** Fast: Ripening of fruits, rusting of iron | Slow: Burning of a matchstick, melting of ice
- **C.** Fast: Burning of a matchstick, ripening of fruits | Slow: Rusting of iron, melting of ice
- **D.** None of the above

#### Q 33. Burning is to irreversible change as freezing is to:

A. Reversible changeB. Chemical changeC. Periodic changeD. Slow change

#### Q 34. The process of rusting seen in an image is an example of:

A. Chemical changeB. Physical changeC. Reversible changeD. Fast change

### Q 35. Why is dissolving sugar in water considered a physical change?

- **A.** Because sugar loses its properties
- **B.** Because no new substance is formed
- **C.** Because it cannot be reversed
- **D.** Because sugar disappears



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 36. The image shows a polluted river with floating garbage. Which of the following could be the result of this pollution?

- **A.** Death of aquatic organisms
- **B.** Increase in biodiversity
- **C.** Clean water availability
- **D.** Better crop production



### Q 37. Case: A lake is turning green due to excessive algae growth. What could be the reason?

- A. Industrial pollution
- **B.** Excessive nutrients from fertilizers
- **C.** Oil spills
- **D.** Deforestation

### Q 38. A farmer uses compost to grow crops. Compost improves soil

#### by:

- **A.** Adding nutrients
- **B.** Removing pests
- **C.** Increasing moisture loss
- **D.** Increasing weeds

CHAMPIONS

# NOF SCIENCE CHAMPIONS LEAGUE

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Q 39. A water jug can hold up to 10 liters of water. A student pours in water as follows:

First pour: 3 liters
Second pour: 4 liters
Third pour: 5 liters

What happens after the third pour?

- **A.** The jug holds 8 liters.
- **B.** The jug overflows by 2 liters.
- **C.** The jug is exactly full.
- **D.** The jug overflows by 1 liter.

Q 40. Case: During a science quiz, the following pairs of materials and their uses are given:

- (A) Cotton Making clothes
- (B) Iron Making tools
- (C) Plastic Insulation
- (D) Glass Conducting electricity

Which pair is incorrectly matched?

- **A.** (A)
- **B.** (B)
- **C.** (C)
- **D.** (D)

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# NOF SCIENCE CHAMPIONS LEAGUE

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### **ANSWER KEY**

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Α	Α	D	В	В	Α	В	В	В	В
11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
D	Α	В	D	D	D	Α	В	В	Α
21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
С	В	С	С	С	В	Α	В	D	Α
31.	32.	33.	34.	35.	36.	37.	38.	39.	40.
В	Α	Α	Α	В	Α	В	Α	D	D



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

Q 1.	Case: You have a patient with a vitamin deficiency. Which o	f
the f	ollowing foods would help them the most?	

**A.** Vegetables

B. Chicken

C. Milk

**D.** None of the above

### Q 2. Which of the following nutrients is categorized as a micronutrient?

**A.** Protein

**B.** Carbohydrates

**C.** Vitamin A

**D.** Fats

### Q 3. Match the food items to the nutrients they provide.

- 1.Milk
- 2.Egg
- 3.Rice
- 4.Banana
- A) Carbohydrates
- B) Protein
- C) Vitamin
- D) Calcium

**A.** 1-D,2-A,3-C,4-B

**B.** 1-C,2-B,3-D,4-A

**C.** 1-B,2-D,3-A,4-C

**D.** 1-D,2-B,3-A,4-C



### Because you are the Best of the Best!

Q 4. Assertion: Eating a variety of food is important for obtaining all necessary nutrients.

Reason: Different food groups provide different nutrients needed for good health.

- **A.** Both Assertion and Reason are correct, and Reason is the correct explanation for Assertion.
- **B.** Both Assertion and Reason are correct, but Reason is not the correct explanation for Assertion.
- **C.** Assertion is correct, but Reason is incorrect.
- **D.** Both Assertion and Reason are incorrect.

### Q 5. Which of the following statements about non-metals are correct?

- i) Non-metals are generally poor conductors of heat and electricity.
- ii) Non-metals are malleable and ductile.
- iii) Non-metals can exist in solid, liquid, and gaseous states.
- iv) Non-metals are generally reactive.
- **A.** i, ii
- B. ii, iv
- C. i, iii
- **D.** i, iii, iv



## NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

- Q 6. Riya notices muddy water in a container. She wants to make the water clear without using chemicals. Which method should she use?
- A. Filtration
- **B.** Sedimentation followed by decantation
- **C.** Evaporation followed by distillation
- **D.** Distillation
- Q 7. A carpenter uses a hammer to drive a nail into a wooden board. Which property of metals is being utilised here?
- A. HardnessB. ConductivityC. MalleabilityD. Ductility
- Q 8. Karan and his friend searched for a source of water during camping. They found a muddy water stream. Which method is most suitable for obtaining clear water from muddy water?
- **A.** Filtration **B.** Distillation
- **C.** Sieving **D.** Sedimentation-decantation
- Q 9. Why is synthetic fibre preferred over natural fibres in certain applications such as making swimwears?
- **A.** Synthetic fibres are more durable and water resistant.
- **B.** Synthetic fibres are biodegradable.
- **C.** Synthetic fibres are more comfortable to wear.
- **D.** Synthetic fibres are cheaper than natural fibres.



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 10. Which of the following statements about fibres are correct?

- i) Natural fibres are obtained from plants and animals.
- ii) Synthetic fibres are man-made fibres.
- iii) All fibres are biodegradable.
- iv) Fibres are used to make fabrics.
- **A.** i, ii, iii
- **B.** i, ii, iv
- C. i, iii, iv
- D. ii, iii, iv

#### Q 11. Why is it important to wash clothes regularly?

- **A.** To remove dirt and stains.
- **B.** To kill germs and bacteria.
- **C.** To prevent the growth of fungi and mold.
- **D.** All of the above.

### $\ensuremath{\mathbf{Q}}$ 12. A seed germinated into a plant and grew taller over weeks.

#### Which two processes are most critical for its growth?

- **A.** Excretion and movement
- **B.** Respiration and reproduction
- **C.** Photosynthesis and reproduction
- **D.** Photosynthesis and respiration





# NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

### Q 13. A lizard changes its body color to match its surroundings. How does this adaptation benefit the lizard?

- **A.** Helps attract prey
- **B.** Increases body temperature
- **C.** Reduces water loss
- **D.** Avoids detection by predators

#### Q 14. What feature allows the lotus to float?

- **A.** Spines on its leaves.
- **B.** Waxy coating and air spaces in its leaves.
- **C.** Strong stems that keep it upright.
- **D.** Deep roots that anchor it to the pond floor.

### Q 15. Sanya noticed bubbles on the surface of the water in the aquarium. How does fish form the bubbles and why?

- **A.** Using scales for floating
- **B.** Using skin for breathing
- **C.** Using gills for breathing
- **D.** Using fins for swimming

### Q 16. A dancer needs to have flexibility in their joints. Which type of joint allows for the greatest range of motion?

Fixed joint

**A.** Gliding jint **B.** 

**C.** Hinge joint **D.** Ball and socket joint



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 17. Rita observed that she could bend her elbow but not her wrist in the same way. What explains this difference?

- **A.** Elbow has a ball-and-socket joint, and the wrist does not.
- **B.** Elbow has a hinge joint, while the wrist has a gliding joint.
- **C.** Elbow has a pivot joint, and the wrist has no joint.
- **D.** Wrist is rigid, but the elbow is flexible.

### Q 18. A fish can swiftly change direction in water. Which structure helps in this movement?

- A. Scales
- **B.** Backbone
- **C.** Fins and tail
- **D.** Gills

# Q 19. A person has a fractured wrist. The doctor suggests using a cast to prevent movement in the broken area. Which type of joint is most likely being affected in this case?

- **A.** Gliding jint
- **B.** Fixed joint
- C. Hinge joint
- **D.** Ball and socket joint





# NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

Q 20. The following items are placed in front of a light source:

Object A: Mirror
Object B: Glass

Object C: Whiteboard
Object D: Wooden board

Which object does not reflect light as effectively as the others?

A. Object AB. Object BC. Object CD. Object D

Q 21. A lake reflects the surrounding trees during the day, creating a clear image of the trees. At night, the reflection is not visible. What is the reason for this change in the visibility of the reflection?

- **A.** The lake loses its reflective property at night.
- **B.** The light from the sun is necessary for reflection.
- **C.** The water becomes more transparent at night.
- **D.** Reflections only occur in dark environments.

#### Q 22. What is needed to form a shadow?

- **A.** A transparent object
- **B.** A light source and an opaque object
- **C.** A smooth surface
- **D.** A colored light source



# NOF SCIENCE CHAMPIONS LEAGUE

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### Q 23. A student observes the shadow formed by a tree at noon and at sunset.

What is the main difference in the size and shape of the shadows during these two times?

- **A.** The shadow at noon is longer than at sunset.
- **B.** The shadow at sunset is longer than at noon.
- **C.** The shadow at sunset is absent.
- **D.** Both shadows are of the same size and shape.

### Q 24. Why are curved measuring tools used for measuring cloth lengths in tailoring?

- **A.** Curved tools provide flexibility for accurate measurement.
- **B.** Cloth is hard to measure with rulers.
- **C.** Straight rulers are not durable.
- **D.** Curved tools are easier to store.

### Q 25. Assertion: An object moving in a straight line at constant speed is in uniform motion.

Reason: Uniform motion means the object has constant acceleration.

- **A.** Both Assertion and Reason are true, and Reason explains Assertion.
- **B.** Both Assertion and Reason are true, but Reason does not explain Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Both Assertion and Reason are false.



# NOF SCIENCE CHAMPIONS LEAGUE

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### Q 26. An image shows a measuring tool. What is it primarily used for?

- **A.** Measuring time
- **B.** Measuring temperature
- **C.** Measuring mass
- **D.** Measuring length



#### Q 27. A ball dropped from a height

### bounces multiple times before coming to rest. Which statement best describes its motion?

- **A.** Linear motion followed by oscillatory motion.
- **B.** Oscillatory motion that gradually stops.
- **C.** Uniform motion throughout.
- **D.** Random motion followed by oscillatory motion.

### Q 28. Classify the following as conductors or insulators: Iron rod, plastic ruler, aluminum foil, rubber band

- **A.** Conductors: Iron rod, aluminum foil | Insulators: Plastic ruler, rubber band
- **B.** Conductors: Plastic ruler, aluminum foil | Insulators: Iron rod, rubber band
- **C.** Conductors: Iron rod, plastic ruler | Insulators: Aluminum foil, rubber band
- **D.** Conductors: All four items



# NOF SCIENCE CHAMPIONS LEAGUE

#### Because you are the Best of the Best!

#### Q 29. Which of the following pairs is incorrectly matched?

- **A.** Electric bell Electromagnet
- **B.** Iron filings Magnetic material
- **C.** Plastic rod Conductor
- **D.** Electromagnet Temporary magnet

### Q 30. Match the following components of an electric circuit with their functions:

**Battery** 

Wire

**Switch** 

**Bulb** 

- **A.** Provides energy, connects components, controls flow, emits light
- **B.** Emits light, provides energy, controls flow, connects components
- **C.** Controls flow, emits light, provides energy, connects components
- **D.** Connects components, emits light, provides energy, controls flow



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

# Q 31. A student connects a bulb to a battery using copper wires. The bulb glows. If the student uses an iron nail instead of a wire, what will happen?

- **A.** The bulb will glow.
- **B.** The bulb will not glow as the circuit is open.
- **C.** The bulb will glow brighter.
- **D.** The bulb will not glow due to short circuit.

#### Q 32. Identify the group containing only reversible changes:

- **A.** Melting of ice, stretching of rubber, rusting of iron
- **B.** Freezing of water, boiling of water, folding of paper
- **C.** Burning of paper, breaking of glass, condensation of steam
- **D.** Cooking of food, dissolving sugar in water, cutting of trees

### Q 33. An image shows a bicycle left outside for months, with its chain rusted. Why did this happen?



- A. Due to exposure to air and water
- **B.** Due to overheating
- **C.** Due to lack of grease
- **D.** Due to mechanical damage



# NOF SCIENCE CHAMPIONS LEAGUE

### Because you are the Best of the Best!

### Q 34. Categorize the following changes with their types as physical or chemical:

#### Cutting of paper, Cooking of food, Melting of wax, Burning of wood

- A. Physical, Chemical, Physical, Chemical
- **B.** Chemical, Physical, Physical, Chemical
- C. Physical, Chemical, Chemical, Physical
- **D.** Chemical, Chemical, Physical, Physical

#### Q 35. Why is salt added to snow-covered roads during winter?

- **A.** To increase melting point of water
- **B.** To decrease melting point of water
- C. To absorb water
- **D.** To act as a catalyst for freezing

### Q 36. Identify the odd one out from the following based on its role in the ecosystem:

A. CowB. TreeC. LionD. Stone

#### Q 37. Choose the mismatch:

- **A.** Forest Paper production
- **B.** Water Drinking
- **C.** Air Carbon dioxide for breathing
- **D.** Soil Agriculture



## NOF SCIENCE CHAMPIONS LEAGUE

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Q 38. Match the natural resources with their correct use:

1.Trees A) Breathing
2.Water B) Irrigation
3.Soil C) Agriculture

4.Air D) Timber production

**A.** 1-D,2-B,3-C,4-A **B.** 1-B,2-A,3-C,4-D **C.** 1-B,2-A,3-D,4-C **D.** 1-C,2-B,3-D,4-A

Q 39. A shopkeeper has the following items on his shelves:

Rice, Wheat, Corn, Apple, Barley

Which item does not belong to the group?

A. RiceB. WheatC. CornD. Apple

Q 40. Rina observes that sugar dissolves faster in hot water than in cold water.

Assertion: Solids dissolve faster in hot water.

Reason: Hot water molecules move faster and help dissolve solids quickly.

- **A.** Both Assertion and Reason are true, and Reason explains Assertion.
- **B.** Both Assertion and Reason are true, but Reason does not explain Assertion.
- **C.** Assertion is true, but Reason is false.
- **D.** Both Assertion and Reason are false.



# NOF SCIENCE CHAMPIONS LEAGUE

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### **ANSWER KEY**

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
Α	С	D	Α	C	В	Α	Α	Α	В
11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
D	D	D	В	С	D	В	С	Α	D
21.	22.	23.	24.	25.	26.	27.	28.	29.	30.
В	В	В	Α	С	D	В	Α	С	Α
31.	32.	33.	34.	35.	36.	37.	38.	39.	40.
Α	В	Α	Α	В	D	С	Α	D	Α



# BECAUSE YOU ARE THE BEST OF THE BEST

The registrations for the new session (2025-26) ROUND 1 will begin from 1st April 2025.

All the students who will register in the month of April will get a **welcome badge from NOF**.





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