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CATS CONTESTS
COMPETENCE & APTITUDE TESTING SERVICES
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QUESTION BOOKLET

**GRADE 5 & 6
JUNIORS**

Time Allowed: 90 Mins.
Maximum Marks: 90

2023

**ICATS
SCIENCE
CONTEST**



ICATS SCIENCE CONTEST 2023

JUNIORS (GRADE 5 & 6)

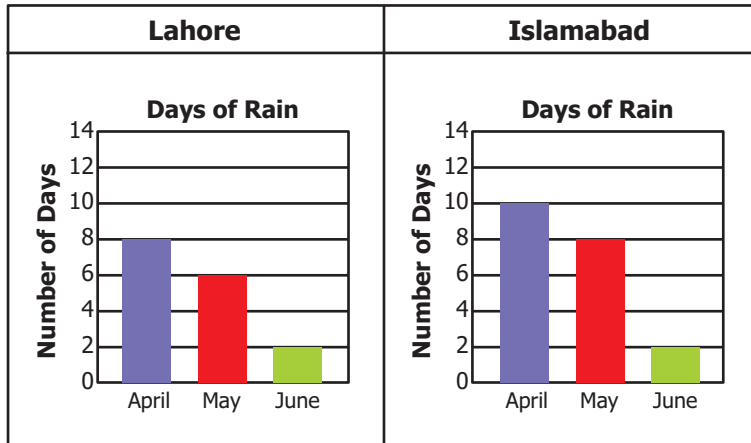
TIME ALLOWED : 90 MINUTES, MAXIMUM MARKS : 90

TOTAL QUESTIONS : 30 MCQS

INSTRUCTIONS

1. DON'T START ATTEMPTING THE PAPER UNTIL INSTRUCTED BY THE INVIGILATORS.
2. INSTRUCTIONS FROM THE EXAMINATION INVIGILATORS MUST BE CARRIED OUT PROMPTLY.
3. CAREFULLY RECHECK YOUR NAME, FATHER NAME, SCHOOL NAME, ADDRESS ETC AT THE BUBBLE SHEET / ANSWER SHEET.
4. RECORD ALL ANSWERS ON THE BUBBLE SHEET ONLY. SELECT BEST ANSWER FROM THE FOUR GIVEN OPTIONS AND MARK ONLY ONE OPTION IN EACH QUESTION.
5. USE BLUE / BLACK INK TO FILL UP THE CIRCLES FOR YOUR ANSWERS ON THE BUBBLE SHEET. USE OF LEAD PENCIL IS NOT ALLOWED.
6. USE OF ANY HELPING MATERIAL INCLUDING CELL PHONES, CALCULATORS AND ELECTRONIC DEVICES IS STRICTLY PROHIBITED.
7. EVERY CORRECT ANSWER EARNS THREE POINTS. THERE WOULD BE NEGATIVE MARKING. ONE POINT WOULD BE DEDUCTED FOR EVERY INCORRECT ANSWER.
8. CANDIDATES MAY NOT LEAVE THE EXAMINATION ROOM UNESCORTED FOR ANY REASON, AND THIS INCLUDES USING THE WASHROOM.
9. THERE ARE FIVE CATEGORIES OF THE CONTEST AS UNDER:
 - A. TODDLERS (GRADE 1 & 2)
 - B. KIDS (GRADE 3 & 4)
 - C. JUNIORS (GRADE 5 & 6)
 - D. JUVENILES (GRADE 7 & 8)
 - E. ADOLESCENTS (GRADE 9 & 10 / O-LEVELS)
10. REGISTERED STUDENTS CAN PARTICIPATE IN THE CONTEST.
11. NO CANDIDATE SHALL TAKE OUT OF THE HALL ANY ANSWER BOOK(S) OR PART OF AN ANSWER BOOK, WHETHER USED OR UNUSED, OR OTHER SUPPLIED MATERIAL.
12. IF A PARTICIPANT DOES NOT UNDERSTAND A WORD OR PHRASE ON THE EXAM PAPER, NEITHER EXAMINER NOR INVIGILATOR IS PERMITTED TO ANSWER.
13. FOR INFORMATION ABOUT UPCOMING CONTESTS OR PROVIDING VALUABLE FEEDBACK, PLEASE VISIT WWW.CATSCONTESTS.ORG
14. ANY ACADEMIC MISCONDUCT OR MALPRACTICE MUST BE REPORTED TO INTERNATIONAL CATS CONTESTS AT INFO@CATSCONTESTS.ORG

Q1 The following bar graphs show the number of days of rain for three months in two cities.



Which statement best compares the number of days of rain for Lahore and Islamabad during the three months?

- A** Lahore had more days of rain than Islamabad in June.
- B** Islamabad had more days of rain than Lahore in April and May.
- C** Lahore and Islamabad had more days of rain in June than in May.
- D** Islamabad had fewer days of rain than Lahore in April, May, and June.

Q2 What can you infer from the below given picture of the snowy trees?

- A** It is January.
- B** A blizzard is about to happen.
- C** The weather is getting warmer.
- D** The temperature outside is cold.



Q3

The Smith Family is having a house built in New York State. The town where the house will be built gets over 100 inches of snow a year. Which type of roof should the Smith Family have for their house and why?

- A a flat roof so the snow can pile on top
- B a sloped roof so the snow can pile on top
- C a flat roof so the snow can slide off the sides
- D a sloped roof so the snow can slide off the sides

Q4

The following table shows the average monthly temperatures for a city.

Month	Average Temperature in Celsius	Average Temperature in Fahrenheit
January	17	63
February	15	59
March	17	63
April	21	70
May	25	77
June	27	81
July	27	81
August	27	81
September	26	79
October	23	73
November	19	66
December	15	59

The city has two seasons: Summer and Winter. Which set of months most likely fall during winter?

- A May to October
- B January to June
- C July to December
- D November to April

Q5 The following table shows estimates of where fresh water is stored by percentages.

Earth's Fresh Water	
Source	Percentage
Lakes	0.25%
Glaciers & Ice	69%
Rivers	0.006%
Groundwater	30%
Other	<1%

Which is the greatest source of fresh water?

- A** lakes **B** rivers **C** groundwater **D** glaciers and ice

Q6 We can take waste materials like newspaper and glass and use them again. If we _____ them, they are collected and sent to plants that will turn them into new products. This will also reduce the size of landfills.

- A** remove **B** reduce **C** reuse **D** recycle

Q7 We depend upon nature to supply us with the raw materials to make the things we use every day. These _____ such as trees for making paper, and oil for heating and for producing plastic products, are limited. We must conserve them for future use.

- A** natural resources **B** minerals **C** sources **D** materials

Q8 During the water cycle, water moves _____.

- A** only between clouds. **C** between plants and soil.
B between lakes and soil. **D** between earth and air.

Q9 The following table shows approximate volumes of ocean water by percentage.

Ocean Water Volume	
Ocean	Percentage
Arctic	1.5%
Atlantic	23.5%
Indian	20%
Pacific	49.5%
Southern	5.5%

Which statement is a conclusion that can be drawn from the data?

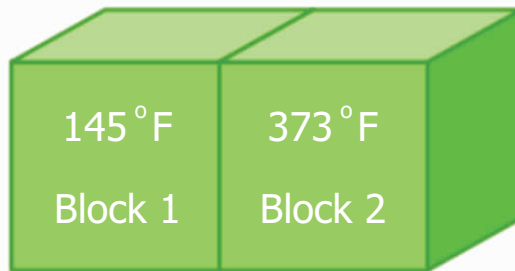
- A** The Atlantic Ocean is the saltiest of the five oceans.
B The Pacific Ocean holds the largest volume of water.
C The volume of water stored in each ocean will change depending on the season.
D The volume of water stored in each ocean has changed because of continental drift.

Q10 What will happen if there is a low amount of precipitation over a period of several years?

- A** There may be more flooding. **C** There may be a drought.
B There may be more snow. **D** There may be more severe thunderstorms.

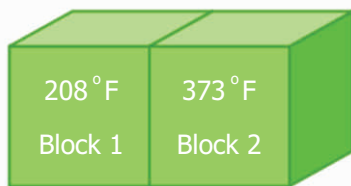
Q11

Two identical blocks are heated to different temperatures. The blocks are placed so that they touch, and heat begins to flow between the blocks. The pair of blocks is insulated, so no energy escapes.

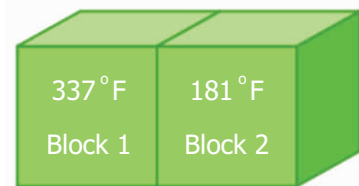


Later, the temperature of each block is measured again. Which pair of temperature is possible?

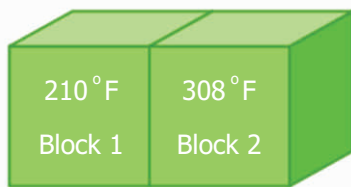
A



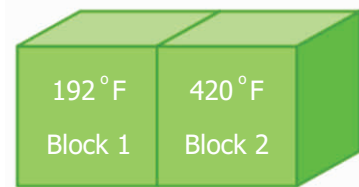
C



B



D



Q12

What are the seasons in order?

A Summer, Spring, Winter, Fall

B Summer, Fall, Winter, Spring

C Summer, Fall, Spring, Winter

D Summer, Winter, Fall, Spring

Q13 One day in January, in the town where Fatima lives, the Sun rose at 7:20 A.M. and set at 5:30 P.M. What would you expect her shadow to have looked like at 7:30 A.M.?

A short and cast toward the west

B long and cast toward the west

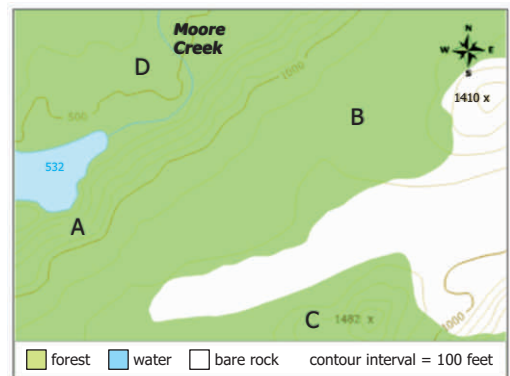
C long and cast toward the east

D short and cast toward the east

Q14 Read the below given text. Then use the map to answer the question.

The slope, or steepness of land, is often different from place to place. On a topographic map, steepness is shown by the spacing between contour lines.

Parts of the map where contour lines are closest together show areas with the steepest slopes.



Complete the following sentence.

The contour lines near Point A are _____ compared to the rest of the map. So, the land near Point A is _____ than most other places shown on the map.

A far apart less steep

B close together steeper

C close together less steep

D far apart steeper

Q15 The smallest bones in the human body are found in the _____.

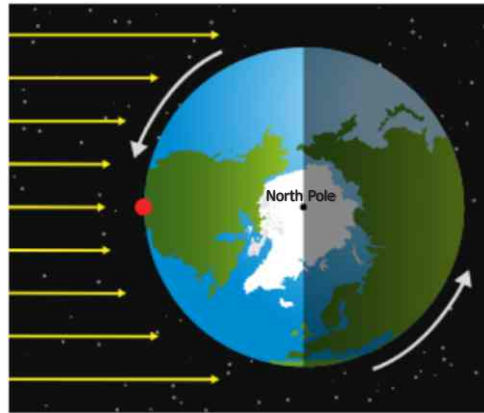
A feet

B ears

C fingers

D knees

- Q16** The below given model shows sunlight reaching part of Earth as Earth rotates. Look at the point on Earth marked ●.



Complete the following sentence.

It is about _____ at the point (shown red) on the model.

- A** midnight **B** noon **C** sunset **D** sunrise

- Q17** Match the following animals with their adaptations that help these animals to survive in winter.



Frog



Bear



Tern

- (i) migrates long distances
(ii) undergoes hibernation
(iii) grows thick fur on its body

- A** Frog - ii, Bear - i, Tern - iii **C** Frog - iii, Bear - ii, Tern - i
B Frog - i, Bear - ii, Tern - iii **D** Frog - ii, Bear - iii, Tern - i

Q18 Select the use of energy that did not add to air pollution.

- A** The engine on a garbage truck burned natural gas.
- B** The engine on a container ship burned fuel made from petroleum oil.
- C** The Sun and wind dried clothes on an outdoor clothesline.
- D** All of the above.

Q19 In which of the following speed of sound is maximum?

- A** Space
- B** Seawater
- C** Air
- D** Gold

Q20 The position of the shadow changes with _____.

- A** the position of the light source.
- B** the movement of the light source.
- C** both (a) and (b).
- D** none of these.

Q21 Which is the one characteristic of the parents that can be inherited by their children?

- A** Deep scar on chin.
- B** Snub nose.
- C** Technique of swimming.
- D** Cut nose.

Q22 The water in oceans cannot be used because _____.

- A** it is salty.
- B** it is harmful.
- C** it is toxic.
- D** it is acidic.

Q23 A substance's chemical structure depends on the number and types of atoms in each of its molecules, as well as on how those atoms are arranged. Substances with different chemical structures have different physical and chemical properties.

When a substance is a reactant in a chemical reaction, its chemical structure changes. During the reaction, the atoms that make up the reactants are rearranged to form products. After the reaction, the products together are composed of the same atoms as the reactants, but those atoms are arranged in a different way. So, the products have different chemical structures than the reactants.



The chemical reaction that produces soap is called saponification. During one type of saponification, oil and sodium hydroxide undergo a chemical change to produce glycerol and soap. As a result of this reaction, the soap has different properties than the oil and sodium hydroxide. Some of these properties are what give soap its cleaning ability.

Which of the following statements is true?

- A** Together, the products of a chemical reaction have the same arrangement of atoms as the reactants.
- B** A substance's chemical structure affects its properties.
- C** Soap is reactant in the saponification reaction.
- D** A chemical change does not occur during saponification.



Q24 Which is correct about pollution?

- A** contamination of the atmosphere.
- B** contamination of the water.
- C** contamination of the soil.
- D** all of them.

Q25 Meteorologists can make predictions about weather events. For example, the passage below describes how a meteorologist might use observations of Earth's atmosphere to predict a tornado event.



a tornado passing through a field

A meteorologist uses atmospheric maps to examine air masses, which are large areas of air in Earth's lower atmosphere. The meteorologist notices that an air mass with dry air is approaching an air mass with warm, moist air. In the same region, there are strong winds higher in the atmosphere. The meteorologist recognizes that this combination of air masses and winds in the region could lead to a tornado event.

Which of the following statements is supported by the passage?

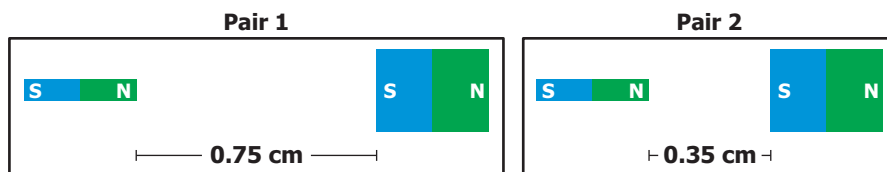
- A Some air masses contain dry air; other air masses contain moist air.
- B Meteorologists are scientists who study meteors.
- C Scientists can study air masses to predict weather events.
- D Both (a) and (c).

Q26 Which is an example of someone using a simple machine to do work?

- A a boy runs across a football field
- B a banker counts money
- C a mother pushes a stroller up a ramp into a building
- D a girl eats a sandwich

Q27

The images below show two pairs of magnets. The magnets in different pairs do not affect each other. All the magnets shown are made of the same material, but some of them are different shapes.



Think about the magnetic force between the magnets in each pair. Which of the following statements is true?

- A The magnitude of the magnetic force is smaller in Pair 1.
- B The magnitude of the magnetic force is smaller in Pair 2.
- C The magnitude of the magnetic force is the same in both pairs.
- D None of above.

Q28

A tugboat tows ships out of a harbor. The tugboat starts pulling the ships when they are stopped at a dock.

Masses of ships	
Name	Mass (kg)
Adelaide	1,428
Bright Start	4,106
Gardenia	4,209
Premier	1,737

The ships have the same acceleration as they begin to move away from the dock. Order the names of the ships to show the size of the force the tugboat applies to each ship.

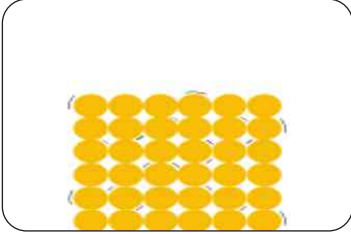
- A Adelaide, Premier, Bright Star, Gardenia
- B Premier, Adelaide, Gardenia, Bright Star
- C Gardenia, Bright Star, Premier, Adelaide
- D None of above.

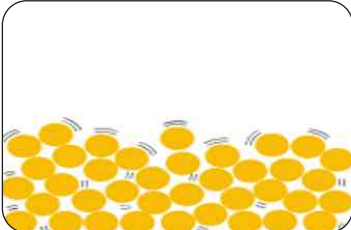
Q29 Most of the substance around you exist in three common states of matter: solid, liquid and gas.

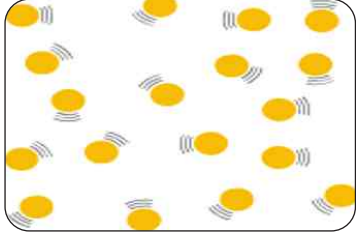
In each state of matter, the particles in a substance behave in a different way:

- In a solid, particles are packed together tightly.
- In a liquid, particles are also close together, but they are able to slide past one another.
- In a gas, particles are spread far apart, and they move quickly.

Which of the following diagrams shows state of matter in liquid form?

A 

B 

C 

D None of these.

Q30 Assertion and Reason are given below. Choose the correct option:

Assertion: A force should act on an object for work to be done.

Reason: The object does not show displacement.

- 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 correct explanation of Assertion.
- C** Assertion is true but Reason is false.
- D** None of the above.

National Toppers
ICATS
Art Contest
2023

Student Name	Father Name	Grade	School
ZOHA SUALEH	MIR M. SHAH SUALEH	1	FUTURE WORLD SCHOOL
SHAZIL ASAF	ASAF JAVED	1	ARMY PUBLIC SCHOOL & COLLEGE FOR BOYS
MUHAMMAD WALEE KHAN	FAHEEM ASHRAF	2	NUST CREATIVE LEARNING SCHOOL & COLLEGE
RAYYAN IRFAN	DR. MUHAMMAD YOUSAF	3	DHA JUNIOR SCHOOL
ANABIYA	HUSSAIN ABID	3	APS&C PMA
MAHNOOR	GHULAM MUSTAFA	4	AES SCHOOL FOR GIRLS
MEERAB KHAN	ADNAN ASIF KHAN	5	LAHORE GRAMMAR SCHOOL (JUNIOR SECTION)
MAHEEN MUNIR	MUNIR KHAN	6	FAUJI FOUNDATION SCHOOL
TALHA ALI KHAN	SADAQAT ALI	7	JOINT STAFF PUBLIC SCHOOL & COLLEGE
AREESHA MOBEEN	MOBEEN TAHIR	8	LAHORE GRAMMAR SCHOOL
ASMA NAEEM	NAEEM AMIN	9	ALLAMA IQBAL PUBLIC GIRLS HIGH SCHOOL
SUMERA KHAN	IMRAN KHAN	10	AES SCHOOL FOR GIRLS

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ICATS
Creative Writing
Contest
2023

Student Name	Father Name	Grade	School
FAARIS ALI QURESHI	DANYAL QURESHI	1	LAHORE GRAMMAR SCHOOL
KHADIIJA AHSAN	AHSAN MAJEED	2	LAHORE GRAMMAR SCHOOL
ZAYYAN MUSTAFA	QAMAR MUSTAFA	3	ARMY PUBLIC SCHOOL (BOYS & GIRLS)
SIBTAIN ALI KHAN	FAWAD ALI PATHAN	4	PAK-TURK MAARIF INT'L SCHOOLS & COLLEGES
SAARIM THARANI	IMRAN NOORALI THARANI	5	AGA KHAN SCHOOL GARDEN
M. AHMED JADOON	ELLI RAZA JADOON	6	THE CITY SCHOOL (RAVI CAMPUS)
ARISHA MAZHAR	MAZHAR ALI	7	KOHSAR CHILDREN'S ACADEMY
VERDAH SAHAR USMAN	USMAN TARIQ SHEIKH	7	LAHORE GRAMMAR SCHOOL
SALEHA SHAHID	SHAHID WAHEED	8	THE CITY SCHOOL (PESHAWAR CAMPUS)
HALEEMA USMAN	USMAN AHMED	8	TNS BEACONHOUSE
UMAIMA AIMEN	MUBASHIR MUSTAFA	9	RANGERS PUBLIC SCHOOL
RANIA ZAKIA MALIK	TAHIR NAEEM MALIK	10	ISLAMABAD COLLEGE OF ARTS AND SCIENCES

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