Mth Exponents and powers

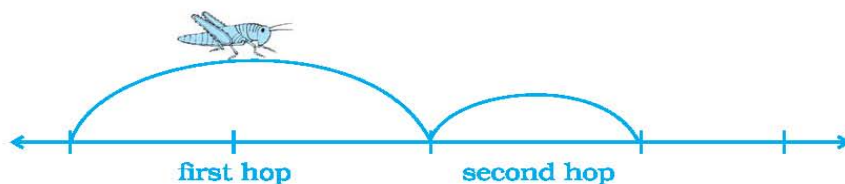Write the correct answer.

1. In $2^n$, n is known as
(a) Base (b) Constant (c) x (d) Variable

2. For a fixed base, if the exponent decreases by 1, the number becomes
(a) One-tenth of the previous number. (b) Ten times of the previous number.
(c) Hundredth of the previous number. (d) Hundred times of the previous number.

3. The multiplicative inverse of $10^{-100}$ is
(a) 10 (b) 100 (c) $10^{100}$ (d) $10^{-100}$

4. . The value of $(-2)^{2 \times 3-1}$ is
(a) 32 (b) 64 (c) – 32 (d) – 64

5. If y be any non-zero integer, then $y^0$ is equal to
(a) 1 (b) 0 (c) – 1 (c) Not defined

6. $(-9)^3 \div (-9)^8$ is equal to
(a) $(9)^5$ (b) $(9)^{-5}$ (c) $(-9)^5$ (d) $(-9)^{-5}$

7. For a non-zero integer x, $x^7 \div x^{12}$ is equal to
(a) $x^5$ (b) $x^{19}$ (c) $x^{-5}$ (d) $x^{-19}$

8. For a non-zero integer x, $(x^4)^{-3}$ is equal to
(a) $x^{12}$ (b) $x^{-12}$ (c) $x^{64}$ (d) $x^{-64}$

9. The value of $[7^{-1} - 8^{-1}]^{-1} - [3^{-1} - 4^{-1}]^{-1}$ is
(a) 44 (b) 56 (c) 68 (d) 12

10. The standard form for 0.000064 is
(a) $64 \times 10^4$ (b) $64 \times 10^{-4}$ (c) $6.4 \times 10^5$ (d) $6.4 \times 10^{-5}$

11. The standard form for 234000000 is
(a) $2.34 \times 10^8$ (b) $0.234 \times 10^9$ (c) $2.34 \times 10^{-8}$ (d) $0.234 \times 10^{-9}$

Fill in the blanks to make the statements true.

12. The multiplicative inverse of $10^{10}$ is _____.

13. $a^3 \times a^{-10} =$ _____. 14. The expression for $8^{-2}$ as a power with the base 2 is _____.

15. Very small numbers can be expressed in standard form by using _____ exponents.

16. Very large numbers can be expressed in standard form by using _____ exponents.

17. By multiplying $(10)^5$ by $(10)^{-10}$ we get _____.

18. Divide 293 by 10,00,000 and express the result in standard form.

19. A new born bear weighs 4 kg. How many kilograms might a five yearold bear weigh if its weight increases by the power of 2 in 5 years?

20.

An insect is on the 0 point of a number line, hopping towards 1. She covers half the distance from her current location to 1 with each hop. So, she will be at $\frac{1}{2}$ after one hop, $\frac{3}{4}$ after two hops, and so on.



(a) Make a table showing the insect's location for the first 10 hops.

(b) Where will the insect be after $n$ hops?

(c) Will the insect ever get to 1? Explain.

**Sc Conservation of plants and animals**

VERY SHORT And SHORT ANSWER QUESTIONS

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| 1. Can a forest regenerate naturally in a short period of time? | 2. Name the first Reserve Forest of India. |
| 3. Mention any one action that you have undertaken to conserve trees. | |
| 4. Why are wildlife sanctuaries important for conservation of plants and animals? | |
| 5. Why are endemic organisms in greater danger of becoming extinct? | |
| 6. How are even small animals important in an ecosystem? | |
| 7. Does soil erosion affect the fertility of soil? How? | |
| 8. What is the unique feature of the biodiversity found in Panchmarhi Biosphere Reserve? | |

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| 9. Mention the aim of Forest (Conservation) Act. | 10. What is biodiversity? |

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| 11. A new species X is introduced in a forest. How is it likely to affect the local species of that area? |

LONG ANSWER QUESTIONS

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| 12. Is deforestation associated with global warming? Explain. |
| 13. How does deforestation lead to frequent floods and droughts? |
| 14. Why should we save paper? |

**SS Police**

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| 1. Write three important functions of the police. | 2. Name a few cognisable offences. |

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| 3. What is an FIR? Which information does it convey? Write in point form. |
| 4. Mention the rules (directions) laid down by The Supreme Court regarding the filing of FIRs. |

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| 5. What do you mean by bail? Explain. | 6. Which rights are available to an arrested person? |

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| 7. Explain the role of the following- a. The public prosecutor   b. the judge |

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| 8. A girl and her mother are by themselves in their house. The bell rings and the girl answers the door, expecting the courier. Three men enter. Two of them attack the girl and her mother, while the third starts looking for valuables. Hearing the screams of the mother and daughter, neighbours come and the three burglars escape with whatever they have found. Describe how the law might take its course in this case. |

**Symposium- Police and court**

**Speaker 1**. Good morning friends. We welcome you all in our symposium – The Police. The symposium will be covered by ………..,…………..,……………,………….. and………….. The functions of the police are to maintain law and order, prevent crimes and detect and investigate crimes. In its role of maintaining law and order and preventing crimes, the police guards high-security areas (for example, government offices), patrols (goes around) localities and is ready at hand during public meetings, rallies, and so on. Traffic police, responsible for controlling traffic, ensuring that people obey traffic rules and preventing accidents, is a special branch of the police. Some other special branches of the police are the criminal investigation department (CID) and armed police. The police also tries to help people protect themselves by making them aware and warning them not to take certain risks, such as renting out their houses or cars to strangers and employing domestic help without checking with the police. Now ……..will discuss how the police investigate a crime?

**Speaker 2. Investigating a crime-** Serious offences for which a person can be tried in a court and be punished with imprisonment are called **cognisable** offences. Murder, robbery and kidnapping are some cognisable offences. The investigation of a cognisable offence begins with the registration of a **first information report.** (FIR) by the police. An FIR is a written report of a crime. It can be filed by the victim or a person who has **witnessed** (seen) or detected a crime. It can be given in writing or dictated to a police official who is supposed to write it down. Now ….will discuss about a FIR.

**Speaker 3.** A FIR must contain the following information. (a) The time, date and place of the offence and the facts related to the offence, if known  (b) The name and address of the person who reports the offence  (c) The names and/or descriptions of the persons involved or suspected to be involved in the crime  (d) The names of witnesses (people who saw the crime being committed), if any After an FIR has been recorded, the person who reports the crime signs it and keeps a copy of it.
Now …………..will discuss rules (directions) regarding the filing of FIRs.

**Speaker 4.** An FIR should normally be filed in the police station under the jurisdiction of which the place of the crime lies. However, even if it is filed in another police station, the police station is bound to register it and then to forward it to the police station concerned. The Supreme Court has laid down the following rules (directions) regarding the filing of FIRs.
• A police station cannot refuse to accept an FIR even if the crime has been committed in an area that is not under its jurisdiction.
• It is bound to register an FIR even if the person reporting the crime cannot provide all the details required, e.g., the name of the victim and the details regarding the crime.
• If an FIR is lodged in a police station that does not have jurisdiction over the place of the crime, that police station must send the FIR to the appropriate police station. Now ….will discuss about framing of a charge sheet.

**Speaker 5.** Framing a charge-sheet- When the police receives an FIR or detects a crime, it launches an investigation, which may include questioning witnesses, recording their statements and collecting other kinds of evidence, for example, fingerprints, stolen goods and murder weapons. If the evidence collected makes the police believe that a person or persons is or are guilty of the reported crime, it files a charge-sheet against the person/s in a suitable criminal (usually magistrate's) court. A charge-sheet is a written document containing the accusation against a person(s). The person(s) named in a charge-sheet are referred to as the accused. With this we conclude our symposium. Thank You.

Quiz- Conservation of plants and animals
Students for more practice in Sc download the questions from the following NCERT link (Book- Exemplar).
http://ncert.nic.in/NCERTS/textbook/textbook.htm
For any assistance/help – Email Rajinder_k_sharma@yahoo.com; Skype Rajinder.Sharma1958; Mob. 9357388588