**CRITIRCAL AND CREATIVE THINKING ITEMS**

**CLASS VIII : CHAPTER 1: RATINOAL NUMBERS**

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| **MATHEMATICAL UNIT 1: SWEET SHOP**  Three friends Ram, Rahim and David went to “RADHEY SWEET MART” to purchase some sweets, namkin and cold drinks for New year party. The following chart shows the price and available stock of sweets and namkin in the shop.   |  |  |  |  | | --- | --- | --- | --- | | **S.NO.** | **SWEETS AND NAMKIN** | **AVAILABLE STOCK** | **PRICE** | | 1 | SWEET LADDU | 10 Kg | ₹ 400 per Kg | | 2 | JALEBI | 8 Kg | ₹ 360per Kg | | 3 | BARFI | 7 Kg | ₹ 300 per Kg | | 4 | MIX-NAMKIN | 100 packets | ₹ 80 per packet | | 5 | POTATO CHIPS | 80 packets | ₹ 30 per packet | | 6 | COLD DRINKS | 50 Bottles | ₹ 50per bottle | | 7 | ROASTED DRY FRUITS | 12 Kg | ₹ 1000 per Kg |   **Question 1.1:** After purchasing 500gm of sweet laddu, jalebi and barfi each, Ram had ₹150 left with him. How much money does Ram had before the purchase? Show your work.  **Question 1.2:**Ram wants to purchase one packet of Mix-Namkin and two packets of potato chips with the remaining ₹150. Explain whether he can purchase it or not.  **Question 1.3:** Rahim had ₹200 and wants to purchase one packet of Mix-Namkin, one packet of potato chips, 250gm Sweet laddu and one bottle of cold drink. But due to insufficient money he had to reduce the quantity of one of the item. Find out the name of that item along with reason.  **Question 1.4:**David had ₹250 and wants to purchasethose items which were not purchased by his friends. Choose the correct list of items he will purchase.   1. Jalebi 2. Roasted Dry fruits 3. Barfi 4. Potato chips  |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 8 points** | | **DESCRIPTION OF ITEM: The item has a table along with some text describing about the contents of table.** | **LEARNING OUTCOME:**  **To apply the concept of rational numbers for solving**  **problems** | |   **MATHEMATICAL LITERACY: QUESTION 1.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection and integration for problem solving** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Closed constructed response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Sweet shop scoring 1.1**  **FULL CREDIT:350**  **PARTIAL CREDIT: ₹ 200 for 500gm laddu**  **NO CREDIT:**other responses and missing   |  | | --- | | Full credit of 2 points will be given if the correct answer is 350 as the cost of 50 gm laddu is 200 which when added to remaining ₹150 equals 350. Partial credit of 1 point will be given if the student find out the cost of 500gm laddu. |   **MATHEMATICAL LITERACY:QUESTION 1.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Closed Constructed Response** | | **COGNITIVE PROCESS** | Employ | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Sweet shop scoring 1.2**  **FULL CREDIT:**Yes with correct justification  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points for the correct answer Yes supported with plausible reasoning.  Cost of 1 packet mix-namkin = ₹ 80  Cost of 2 packets of potato chips = ₹ 60  So he need ₹ 140 and he had ₹ 150. |   **MATHEMATICAL LITERACY: QUESTION 1.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Open Constructed Response** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Sweet shop scoring 1.3**  **FULL CREDIT:**(i) Laddu  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points for the correct answer Laddu as it is not possible to reduce quantity of other items except laddu. Instead of buying 250gm laddu, he can buy 100gm of laddu. |   **MATHEMATICAL LITERACY: QUESTION 1.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Sweet shop scoring 1.4**  **FULL CREDIT:**(ii) Roasted Dry fruits  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points for the correct answer Roasted Dry Fruits. | |

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| **MATHEMATICAL UNIT 2:NUMBER GAME**  MrsJoseph instructed her fifteen students to stand in a straight line at a distance of 1metre each and assigned numbers 1 to 15 to each student in such a way that odd numbers were given to boys and even numbers were given to girls.    **Question 2.1:**Find the number of girls and number of boys who participated in the game.  **Question 2.2:**What is the distance between third and twelfth student?  **Question 2.3:** Mrs Joseph told the students to make group of two students in such a way that the product of their assigned number is 12.  Circle Yes/No for each of the following statements:   |  |  | | --- | --- | | **Statements** | **Yes/No** | | 1. Only 3 groups were formed. | Yes/No | | 1. Each group has a boy and a girl. | Yes/No | | (c) The no. of groups having atleast one girl is 3. | Yes/No |  |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 6 points** | | **DESCRIPTION OF ITEM: The item has a picture along with some text description about it.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 2.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational** | | **ITEM FORMAT** | **Short response item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Number game scoring 2.1**  **FULL CREDIT:Girls = 7 , Boys = 8**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is :**Girls = 7 , Boys = 8** |   **MATHEMATICAL LITERACY: QUESTION 2.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational** | | **ITEM FORMAT** | **Short response item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Number game scoring 2.2**  **FULL CREDIT:9m**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is 9m |   **MATHEMATICAL LITERACY: QUESTION 2.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Number game scoring 2.3**  **FULL CREDIT:Yes, No, Yes in that order**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is **Yes, No, Yes in that order** |   **MATHEMATICAL UNIT 3: PATTERNS**  Theshaded region of the following patterns represents the rational numbers A, B and C respectively.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **A** |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | | **B** |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  | | **C** |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |   **Question 3.1:**added to A gives B. Check whether the statement is true or not.  **Question 3.2:**Find the value of A + B – C.  **Question 3.3:**Find the value of A × B + C.  **Question 3.4:**Check whether the statements are true or false. Also show your work  **Statement 1:** If the shaded region of third pattern represents C, then the non-shaded region represents the additive inverse of C.  **Statement 2:** If the shaded region of third pattern represents C, then the reciprocal of shaded region represents the multiplicative inverse of C.   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 8 points** | | **DESCRIPTION OF ITEM: The item has a picture along with some text description about it.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 3.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Patterns scoring3.1**  **FULL CREDIT:True along with reasonable explanation**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is True along with reasonable explanation like |   **MATHEMATICAL LITERACY: QUESTION 3.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Patterns scoring 3.2**  **FULL CREDIT:**  **Partial credit: For identification of A = , B = ,C =**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is |   **MATHEMATICAL LITERACY: QUESTION 3.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Patterns scoring 3.3**  **FULL CREDIT:**  **Partial credit: For identification of A = , B = , C =**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is |   **MATHEMATICAL LITERACY: QUESTION 3.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Patterns scoring 3.2**  **FULL CREDIT:Statement 1: False along with correct working for getting result**  **Statement 2: True along with correct working for getting result**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is :-  **Statement 1: False as the non-shaded region of C represents and sum of and is not equal to 0.**  **Statement 2: True as the reciprocal of shaded region of C represents and product of and is 1.** |   **MATHEMATICAL UNIT 4: VISIT TO ZOO**  Ghreesa and her brother Harikrishna visited the kankariya Zoo last Sunday. They saw a chart at the entrance of the zoo having details of all the animals in the zoo.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **CAGE  NUMBER** | **TYPE OF ANIMALS/BIRDS** | **ANIMALS/BIRDS** | **DETAILS OF ADULT ANIMALS** | | **DETAILS OF  BABY ANIMAL** | | **TOTAL** | | **MALE** | **FEMALE** | **MALE** | **FEMALE** | | **1** | **CARNIVOROUS** | **LION** | **1** | **1** | **2** | **1** | **5** | | **2** | **TIGER** | **1** | **1** | **1** | **2** | **5** | | **3** | **LEOPARD** | **1** | **1** | **2** | **1** | **5** | | **4** | **BEAR** | **1** | **1** |  |  | **2** | | **5** | **HERBIVOROUS** | **ELEPHANT** | **1** | **1** | **1** |  | **3** | | **6** | **ZEBRA** | **2** | **3** | **3** | **2** | **10** | | **7** | **MONKEY** | **10** | **15** | **22** | **17** | **64** | | **8** | **RHINOCEROS** | **1** | **1** |  | **1** | **3** | | **9** | **BLACKBUCK** | **11** | **23** | **25** | **19** | **78** | | **10** | **DEER** | **19** | **21** | **22** | **28** | **90** | | **11** | **GIRAFFE** | **1** | **1** | **2** | **1** | **5** | | **TOTAL ANIMALS** | | | **49** | **69** | **80** | **72** | **270** |   **Question 4.1:**How many carnivorous male adult animals are there in the zoo?  **Question 4.2:**Calculate the number of female animals in the zoo.  **Question 4.3:**Find the difference between number of adult and baby animals?  **Question 4.4:**Harikrishna told that baby deer are more in number? Tell whether he is correct or not.  **Question 4.5:**Which animals are equal in numbers in the zoo?  **Question 4.6:**Ghreesa doesn’t saw baby bear in the zoo. Why?  **Question 4.7:**Calculate the ratio of herbivorous male animals to herbivorous male adult animal.   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 14 points** | | **DESCRIPTION OF ITEM: The item has a chart along with someinformation about zoo animals.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 4.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Patterns scoring 4.1**  **FULL CREDIT:4**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is 4 |   **MATHEMATICAL LITERACY: QUESTION 4.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Patterns scoring 4.2**  **FULL CREDIT:141**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is 141 |   **MATHEMATICAL LITERACY: QUESTION 4.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Patterns scoring 4.3**  **FULL CREDIT: 34**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is 34 |   **MATHEMATICAL LITERACY: QUESTION 4.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Patterns scoring 4.4**  **FULL CREDIT:Yes, he is correct**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is Yes. |   **MATHEMATICAL LITERACY: QUESTION 4.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Patterns scoring 4.5**  **FULL CREDIT:Lion, Tiger, Leopard and Girrafe.**  **Partial Credit : If any three of the above animals are identified**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is **Lion, Tiger, Leopard and Girrafe.** |   **MATHEMATICAL LITERACY: QUESTION 4.6**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Patterns scoring 4.6**  **FULL CREDIT: Detail of Baby animal against Beer is zero in the given chart**  **NO CREDIT:** other responses and missing   |  | | --- | | Give 2 points if the correct answer is **Detail of Baby animal against Beer is zero in the given chart** |   **MATHEMATICAL LITERACY: QUESTION 4.7**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Public Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Patterns scoring 4.7**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is |   **MATHEMATICAL UNIT 5: MISSING NUMBERS**  A, B and C are three rational numbers such that :   1. B is twice of A 2. C is two third of B   **Question 5.1:** Circle Yes/No for each of the following statements:   |  |  | | --- | --- | | **Statements** | **Yes/No** | | 1. If A is then B is. | Yes/No | | 1. If B is 12 then C is 8. | Yes/No | | (c) A is three-fourth of C. | Yes/No |   **Question 5.2:**Find the value of A + B – C if C is equal to 1.  **Question 5.3:**If A equals then check whether A × B is two times square of or not.  **Question 5.4:**What is the value of A ÷C ?  **Question 5.5:**Express the multiplicative inverse of B in terms of A.   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 10 points** | | **DESCRIPTION OF ITEM: The item has some information about relation between A, B and C** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 5.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Missing number scoring 5.1**  **FULL CREDIT:No, Yes, Yes in that order**  **Partial Credit : If only any two responses are correct**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer isNo, Yes, Yes in that order |   **MATHEMATICAL LITERACY: QUESTION 5.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Missing number scoring 5.2**  **FULL CREDIT:**  **Partial Credit for identification of A = , B =**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is |   **MATHEMATICAL LITERACY: QUESTION 5.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Closed constructed item** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Missing number scoring 5.3**  **FULL CREDIT:No it is not correct**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer isNo it is not correct |   **MATHEMATICAL LITERACY: QUESTION 5.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Missing number scoring 5.4**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is |   **MATHEMATICAL LITERACY: QUESTION 5.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Closed constructed Response** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Missing number scoring 5.5**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is |   **MATHEMATICAL UNIT 6: MAP OF PARK**  Three friends Aditya, Shreyash and Nikhil have visited the park as they wanted to collect information for their mathsproject. They observed the map of park carefully and make some notes.They observed that length of each small square in given map is 10 m and Ashoka trees were planted in each small square around the park.   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **10M** |  |  |  |  |  |  |  |  |  |  | | **10M** |  |  |  |  |  |  |  |  |  |  |  | |  |  | **RED ROSE   FLOWERBED** | | **SWINGS  FOR CHILDREN** | | | **MOGRA   FLOWERBED** | |  | |  |  |  | |  |  | **PATH FOR WALKING** | | | | | | | | |  | |  |  | **SEESAW FOR CHILDREN** | |  | **FOUNTAIN** | | |  | **SLIDES FOR CHILDREN** | |  | |  |  |  | |  |  |  | |  |  | **PATH FOR WALKING** | | | | | | | | |  | |  |  | **MARIGOLD  FLOWERBED** | |  | **SWINGS  FOR CHILDREN** | | |  | **PINK ROSE   FLOWERBED** | |  | |  |  |  | |  |  |  |  |  |  |  |  |  |  | |  | **MAP OF GARDEN** | | | | | | | | | | |   **Question 6.1: Find** the dimensions of park.  **Question 6.2:** Calculate the area in which swings for children have been arranged.  **Question 6.3:**Find the perimeter of all flowerbeds. Show your work.  **Question 6.4:** The number of Ashoka trees planted in the park is   1. 35 2. 36 3. 37 4. 34 5. None of the above   **Question 6.5:** Find the area marked as “path for walking”   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 10 points** | | **DESCRIPTION OF ITEM: The item has a map of park.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 6.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Map of Park scoring 6.1**  **FULL CREDIT:Length=110m, Breadth=110m**  **Partial Credit : If either Length or breath is identified correctly**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is length =110m and breadth =110m |   **MATHEMATICAL LITERACY: QUESTION 6.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Map of Park scoring 6.2**  **FULL CREDIT:1200m2**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is1200m2 as length and breadth of area marked for swings of children is 30m and 20m respectively. So its area is 600m2.  Since in the map two rectangles were marked as swings for children each of area 600m2. Thus, total area marked for swings of children is 1200m2 |   **MATHEMATICAL LITERACY: QUESTION 6.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Map of Park scoring 6.3**  **FULL CREDIT:320m along with calculation**  **PARTIAL CREDIT: 320m**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is320m along with calculation which is as follows:  Each flower bed is square shaped having length of side 20m  So perimeter of each flower bed is 80m and there are 4 flower beds  Hence perimeter of all flower beds is 4×80=320m |   **MATHEMATICAL LITERACY: QUESTION 6.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Interpret and Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Map of Park scoring 6.4**  **FULL CREDIT:36**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is36 as no. of small squares in which Ashoka trees were planted is 36 |   **MATHEMATICAL LITERACY: QUESTION 6.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Map of Park scoring 6.5**  **FULL CREDIT:1800m**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is1800m as the length and breadth of rectangular region marked as path for walking is 90m and 10m respectively. So area of each rectangular region is 900m. Hence area of region marked as path for walking is 900m+900m=1800m. |   **MATHEMATICAL UNIT 1: FORMATION OF RATIONAL NUMBERS**  MrPandya told students to choose numbers and form two groups X and Y. Thefollowing numbers were chosen by the students.  **GROUP X:**  **GROUP Y:**  He instructed students to form rational numbers of form where ‘a’ is to be chosen from group Y and ‘b’ is to be chosen from box X.  **Question 1.1:**Although there are 6 numbers but the students form only 3 rational numbers. Why?  **Question 1.2:**List the rational numbers formed by students.  **Question 1.3:**How many positive rational numbers are there?   1. **1 (ii) 2 (iii) 3 (iv) 4**   **Question 1.4:**How many negative rational numbers are there?   1. **1 (ii) 2 (iii) 3 (iv) 4**   **Question 1.5:**How many integers are there?   1. **1 (ii) 2 (iii) 3 (iv) 4**   **Question 1.6:**If ‘a’ is chosen from group X and ‘b’ is chosen from group Y then find the number of rational numbers formed.  **Question 1.7:**In question 1.1 and 1.5 the numbers were chosen from same groups but still number of rational numbers formed is different. Why?  PREPARED BY  S.J.PANDYA  PGT MATHS  KV-2 , KRIBHCO SURAT   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 14 points** | | **DESCRIPTION OF ITEM: The item has some information about two groups of number.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 1.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Closed constructed response** | | **COGNITIVE PROCESS** | Employ and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.1**  **FULL CREDIT:**we can make 9 numbers but only 4 of them are rational numbers out of which two numbers are equivalent. Remaining 5 numbers are either not defined or irrational.  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer we can make 9 numbers but only 4 of them are rational numbers out of which two numbers are equivalent. Remaining 5 numbers are either not defined or irrational. |   **MATHEMATICAL LITERACY: QUESTION 1.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.2**  **FULL CREDIT:,**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris |   **MATHEMATICAL LITERACY: QUESTION 1.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.3**  **FULL CREDIT:1**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 1 |   **MATHEMATICAL LITERACY: QUESTION 1.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.4**  **FULL CREDIT:2**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 2 |   **MATHEMATICAL LITERACY: QUESTION 1.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.5**  **FULL CREDIT:1**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 1 |   **MATHEMATICAL LITERACY: QUESTION 1.6**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.2**  **FULL CREDIT:4**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 4 |   **MATHEMATICAL LITERACY: QUESTION 1.7**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 1.7**  **FULL CREDIT:For reasonable reason**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the answer is a student give a reasonable reason like:  In first case the denominator is chosen from X which has 0 and any no whose denominator is 0 is not a rational no. whereas in second case the denominato.r is chosen from Y which has non-zero members |   **MATHEMATICAL UNIT 2: COINS**  There are three coins of radii R, 3R and 5R.  **Question 2.1:**If areas of three circles are A1, A3 and A5 respectively, then find the rational number which is equal to A1: A3?  **Question 2.2:**If circumference of the circles are P1, P3 and P5 respectively then find rational number which is equal toP3:P5  **Question 2.3:**Which is greater: A1: A3 or P3: P5    **Question 2.4:**Find the value of x such that  **Question 2.5:** The value of X for which   1. 15 2. None of the above.   PREPARED BY  S.J.PANDYA  PGT MATHS  KV-2 , KRIBHCO SURAT   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 10 points** | | **DESCRIPTION OF ITEM: The item has some information about three coins of different radius** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 2.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Change and Relationship | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 2.1**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris |   **MATHEMATICAL LITERACY: QUESTION 2.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | **Change and Relationship** | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 2.2**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris |   **MATHEMATICAL LITERACY: QUESTION 2.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | **Change and Relationship** | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate and Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 2.3**  **FULL CREDIT:P3:P5**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer**P3:P5** |   **MATHEMATICAL LITERACY: QUESTION 2.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | **Change and Relationship** | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 2.4**  **FULL CREDIT:x=2**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris x=2 |   **MATHEMATICAL LITERACY: QUESTION 2.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | **Change and Relationship** | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 2.5**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris |   **MATHEMATICAL UNIT 3:MATHEMATICS vs PHYSICS**  The following double bar graph represents marks (out of 40) of four students in mathematics and physics.Series 1 and Series 2 shows student’s marks in Maths and Physics respectively.  **Question 3.1: Complete the following table :**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **STUDENT’S NAME** | **MARKS IN MATHS** |  | **MARKS IN PHYSICS** |  | | AMAN | 32 | ----- | ----- |  | | AKRITI | ----- |  | 30 | ----- | | NEHA | 25 | ----- | ------ |  | | SANJAY | ----- | ----- | 15 | ----- |   **Question 3.2:**Find the name of students whose marks in Maths is more than marks in Physics.  **Question 3.3:**Find the name of students who got at least 50% marks in Maths and Physics both.   1. Aman and Akriti 2. Akriti and Neha 3. Aman and Neha 4. All of the above   **Question 3.4:**Find the name of students who got less than 50% marks in Maths and Physics both.   1. **1** 2. **2** 3. **3** 4. **4**  |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 8 points** | | **DESCRIPTION OF ITEM: The item consists of a double bar graph representing marks of four students in maths and physics** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 3.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 3.1**  **FULL CREDIT:For correct answer**  **NO CREDIT:**other responses and missing   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Give 2 points if the correct answeris   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **STUDENT’S NAME** | **MARKS IN MATHS** |  | **MARKS IN PHYSICS** |  | | AMAN | 32 |  | 36 |  | | AKRITI | 35 |  | 30 |  | | NEHA | 25 |  | 20 |  | | SANJAY | 12 |  | 15 |  | |   **MATHEMATICAL LITERACY: QUESTION 3.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 3.2**  **FULL CREDIT:Akriti and Neha**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **Akriti and Neha** |   **MATHEMATICAL LITERACY: QUESTION 3.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 3.3**  **FULL CREDIT:(iv) All of the above**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **(iv) All of the above** |   **MATHEMATICAL LITERACY: QUESTION 3.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Educational Process** | | **ITEM FORMAT** | **Short item response** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Formation of Rational numbers scoring 3.4**  **FULL CREDIT:1**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is 1 as only Sanjay got atmost 50% marks in both subjects |   **MATHEMATICAL UNIT 4: ACTIVITIES**  The following Pie Chart shows the number of hours spent by a student on different activities in a day.  Let p, q, r, s, and t denotes the fraction of day spent on school, self study, sleep, sports and other activities respectively then answer the following questions :  **Question 4.1:** Prove that  **Question 4.2:**Represent p, q, r, s and t on a number line.  **Question 4.3:**Find five rational numbers between r and s.  **Question 4.4:**The multiplicative inverse of 2 is :   1. p(ii) q (iii) r (iv) s (v) t   **Question 4.5:**Is it possible to find a number x such that   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 15 min**  **TOTAL CREDIT: 10 points** | | **DESCRIPTION OF ITEM: The test item consists of a pie-chart having information about no. of hours spent by a student** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 4.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Open constructed response** | | **COGNITIVE PROCESS** | Employ and Interpret | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Activities scoring 4.1**  **FULL CREDIT:For Correct Proof**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris as follows:  Hence  s and t are rational numbers which are commutative wrt addition but not commutative wrt subtraction. Hence |   **MATHEMATICAL LITERACY: QUESTION 4.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Activities scoring 4.2**  **FULL CREDIT:For correct representation on a number line**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **For correct representation of all numbers on a number line** |   **MATHEMATICAL LITERACY: QUESTION 4.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Open constructed response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Activities scoring 4.3**  **FULL CREDIT:For correct five rational numbers between them**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the students find **correct five rational numbers between them.** |   **MATHEMATICAL LITERACY: QUESTION 4.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Employ and Interpret | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Activities scoring 4.4**  **FULL CREDIT:(iii) or r**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris r or (iii) as r= which is multiplicative inverse of 2 |   **MATHEMATICAL LITERACY: QUESTION 4.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal Process** | | **ITEM FORMAT** | **Closed constructed response** | | **COGNITIVE PROCESS** | Employ and Interpret | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Activities scoring 4.5**  **FULL CREDIT: Yes**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris Yes as and we can find number 24 such that |   **MATHEMATICAL UNIT 5: WHEAT CONTAINERS**  There are three containers A, B and C to fill the wheat. Their capacities are indicated below.    **Question 5.1:**If capacity of container A is 64m3. Then the capacities of B and C are:   1. 48 m3 and 24 m3 2. 48 m3 and 32 m3 3. 32 m3 and 24 m3 4. None of the above   **Question 5.2:**Circle Yes/No for each of the following statements:   |  |  | | --- | --- | | **Statements** | **Yes/No** | | 1. C’s capacity is times of A’s capacity. | Yes/No | | 1. The difference between A’s and B’s capacity is 0.125 cubic unit | Yes/No | | 1. B’s capacity is times the A’s capacity | Yes/No |  |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME:5 min**  **TOTAL CREDIT: 4 points** | | **DESCRIPTION OF ITEM: The test item consist of a picture depicting capacities of containers A, B and C** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 5.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Space and shape | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Wheat Containers scoring 5.1**  **FULL CREDIT:(i)** 48 m3 and 24 m3  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 48 m3 and 24 m3 |   **MATHEMATICAL LITERACY: QUESTION 5.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Space and shape | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **4** |   **CREDIT PATTERN**  **Wheat Containers scoring 5.2**  **FULL CREDIT: Yes, No, Yes in that order**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **Yes, No, Yes in that order** |   **MATHEMATICAL UNIT 1: KNOW YOUR STATES**    Western region of India is highly Industrialized area with a large population. It is bordered by the Thar desert in the Northwest and the Vindhya Range in the North. A large portion of West India shares the Deccan Plateau with South India. The following table shows some information about the states in Western region of India.   |  |  |  |  | | --- | --- | --- | --- | | **Name of State** | **Male expectancy** | **Industrial area**  **(square feet)** | **Border length by Thar desert(in kms)** | | Rajasthan | 59.8 | 70,000 | 469 | | Gujarat | 61.9 | 32,400 | 721.6 | | Goa | 50.6 | 21,505 | 1,717 | | Maharashtra | 64.5 | 4,00,000 | 1,288.9 |   **Question 1.1: T**he Male expectancy of Maharashtra is :  **Question 1.2:**The ratio of the Industrial area of Rajasthan to Maharashtrais :   1. (ii)(iii)(iv)Both (ii) and (iii)   **Question 1.3:**Say True or False:  >>.  If false, write the correct statement.  **Question 1.4:**The literacy rate of the western states is of Southern states, then which states have higher literacy rate?  **Question 1.5:**If the literacy rate of southern states is 99.7 and the literacy rate of the western states is of Southern states, then calculate the literacy rate of the western States.   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 20 min**  **TOTAL CREDIT: 10 points** | | **DESCRIPTION OF ITEM: The test item consist of a smart art graphic along with a table consisting of information about Western states of India** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 1.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Know your statesscoring 1.1**  **FULL CREDIT:(i) or**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **(i) or** |   **MATHEMATICAL LITERACY: QUESTION 1.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Know your states scoring 1.2**  **FULL CREDIT: (ii) or**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **) or** |   **MATHEMATICAL LITERACY: QUESTION 1.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **True/False** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Know your states scoring 1.3**  **FULL CREDIT:True**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris True as 1.717>1.288>0.721>0.469 |   **MATHEMATICAL LITERACY: QUESTION 1.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Know your states scoring 1.4**  **FULL CREDIT:Southern states**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris Southern states as is less than 1. So western states has lesser literacy rate than southern states |   **MATHEMATICAL LITERACY: QUESTION 1.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Know your states scoring 1.5**  **FULL CREDIT:66.46**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 66.46 as .46 |   **MATHEMATICAL UNIT 2: INTERNET DATA SPEED**  The following graph represents the internet data speed (in kpbs) offered by 5 companies BSNL, AIRTEL, JIO, VODAFONE& IDEA in three months January, February&March of the year 2020.    **Question 2.1: I**n how many companies the data speed in January was more than 10% as that of in February?  **Question 2.2:** The ratio of maximum internet speed to the minimum offered by Idea is :  (a)(b)1(c)(d)both b and c  **Question 2.3:**Find the name of companies who offer same internet speed in two different months   1. Airtel and Jio 2. Idea and Jio 3. Airtel and Vodafone 4. BSNL and Vodafone   **Question 2.4:**Find the name of companies who offer same internet speed in same months.   1. Airtel and Ji 2. Airtel and Vodafone 3. BSNL and Vodafone 4. Both (ii) and (iii)  |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 10 min**  **TOTAL CREDIT: 8 points** | | **DESCRIPTION OF ITEM: The test item consist of a graph representing internet data speed offered by companies.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 2.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Internet Data Speedscoring 2.1**  **FULL CREDIT:1**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 1 as the internet data speed offered by BSNL in January is 10% more than that of February |   **MATHEMATICAL LITERACY: QUESTION 2.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Internet Data Speed scoring 2.2**  **FULL CREDIT:(d) or both b and c**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **(d) or both b and c** |   **MATHEMATICAL LITERACY: QUESTION 2.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Internet Data Speed scoring 2.3**  **FULL CREDIT:(iii) or Airtel and Vodafone**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **Airtel and Vodafone** |   **MATHEMATICAL LITERACY: QUESTION 2.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Societal/Public** | | **ITEM FORMAT** | **MCQ** | | **COGNITIVE PROCESS** | Interpret | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Internet Data Speed scoring 2.4**  **FULL CREDIT:(iv) or Both (ii) and (iii)**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer is **(iv) as**   * Airtel and Vodafone * BSNL and Vodafone   These companies offered same internet speed in same month |   **MATHEMATICAL UNIT 3: Wood Work Project**  Jiya was doing some woodwork for a school project. She had a piece of wood which is 4 feet long.  https://www.ck12.org/flx/show/THUMB_POSTCARD/image/user%3AbXNtY2NyZXZpZXdAZ21haWwuY29t/750765-1437800109-12-53-15499418055_289e25e819_o.jpg  **Question 3.1:** She cut off a piece which is 2 feet long from it . After cutting the first piece shewas left with feet long wood. She wants 5wood pieces each of length foot .   1. Does she have enough wood to cut 5 more equal pieces of wood ? 2. If she want to cut 6 pieces of equal length from the left out wood of length feet, then what is the length of each piece so obtained?   **Question 3.2:** If she wants to cut the piece of wood of length 4 feet in such a way that she will get 64 equal pieces of wood, then what is the length of each piece so obtained?  **Question 3.3:** If she want to cut the piece of wood of length 4 feet in such a way that she will get equal pieces of wood of length 0.125 feet each, then how many wood pieces she obtained?  **Question 3.4:**If she wants to cut the piece of wood of length 4 feet in such a way that she will get equal pieces of length 1 foot each, then how will she do that. Explain.   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 10 min**  **TOTAL CREDIT: 8 points** | | **DESCRIPTION OF ITEM: The test item consist of information about a school project done by students** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 3.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Space and Shape | | **CONTEXT** | **Educational** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Wood Work Projectscoring 3.1**  **FULL CREDIT:No,**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris (i) No |   **MATHEMATICAL LITERACY: QUESTION 3.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Space and Shape | | **CONTEXT** | **Educational** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Wood Work Project scoring 3.2**  **FULL CREDIT: feet**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris  **feet** |   **MATHEMATICAL LITERACY: QUESTION 3.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Space and Shape | | **CONTEXT** | **Educational** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Wood Work Project scoring 3.3**  **FULL CREDIT:32**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **32** |   **MATHEMATICAL LITERACY: QUESTION 3.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Space and Shape | | **CONTEXT** | **Educational** | | **ITEM FORMAT** | **Open constructed response** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Wood Work Project scoring 3.4**  **FULL CREDIT:For reasonable response**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the student explains the way of getting 1 foot wood piece correctly with reasonable argument. |   **MATHEMATICAL UNIT 4: PARK CLEANING**  Inspired by the “Swachh Bharat mission”, Piya and her friends Sunita, Kiya and Hiya decided to clean their society park. Her friends clean , andpart of the park respectively.    **Question 4.1:**How much part of the park will be left for Piya to clean?  **Question 4.2:**Who will clean the maximum and minimum section of park?  **Question 4.3:**If Sunita left after cleaning half of of the section of park assigned to her due to some reason ,then is it justified to say that Sunita and Hiya cleaned equal portions of park. Explain   |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 10 min**  **TOTAL CREDIT:6 points** | | **DESCRIPTION OF ITEM: The test item consist of a picture along with some description** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 4.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Park cleaningscoring 4.1**  **FULL CREDIT:**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris  **as** |   **MATHEMATICAL LITERACY: QUESTION 4.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Park cleaning scoring 4.2**  **FULL CREDIT:Maximum area cleaned by Sunita**  **Minimum area cleaned by Piya**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **Maximum area cleaned by Sunita and Minimum area cleaned by Piya** |   **MATHEMATICAL LITERACY: QUESTION 4.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Connection** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **2** |   **CREDIT PATTERN**  **Park cleaning scoring 4.3**  **FULL CREDIT:For correct explanation**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris No it is not justified as the area cleaned by Hiya is more than the half the area cleaned by Sunita |   **MATHEMATICAL UNIT 5: VIDEO GAME SCORE BOARD**  Hardik is playing a video game in which he will either earns a Staror a Sparkie.He got 3 points for a star and losespoints for a sparkie. He is currently playing 3rd level and in order to play 4th level he needsa score of 10 points.   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **LEVEL** | **Game 1** | **Game 2** | **Game 3** | **Game 4** | | **LEVEL1** |  |  |  |  | | **LEVEL2** |  |  |  |  | | **LEVEL3** |  |  |  |  |   **Question 5.1:**How many points did he score in Level 1?  **Question 5.2:**In which level he scored more?  **Question 5.3:**What is his score after he played three levels of video games ?  **Question 5.3:**Can he unlock 4th level?State reason for your answer.  **Question 5.4:**How many points does he need more to unlock 4th level?  **Question 5.5:**If Hardik’s score after playing 3rdlevel is 12and he needs 15 points to unlock 5th level then which of the following scoreboard depicts his score in 4th level?   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **(i)** | **LEVEL 4** |  |  |  |  | | **(ii)** | **LEVEL 4** |  |  |  |  | | **(iii)** | **LEVEL 4** |  |  |  |  | | **(iv)** | **LEVEL 4** |  |  |  |  |  |  |  |  | | --- | --- | --- | | **DOMAIN:**  Mathematical Literacy | **TOPIC:**  RATIONAL NUMBERS | **CLASS:** VIIITH  **EXPECTED TIME: 10 min**  **TOTAL CREDIT: 10 points** | | **DESCRIPTION OF ITEM: The test item consist video game score of child Hardik.** | **LEARNING OUTCOME:**  **To learn the basic characteristics of rational numbers** | |   **MATHEMATICAL LITERACY: QUESTION 5.1**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **3** |   **CREDIT PATTERN**  **Video Game Score Board scoring 5.1**  **FULL CREDIT: -1.5**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris -1.5 |   **MATHEMATICAL LITERACY: QUESTION 5.2**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Video Game Score Board scoring 5.2**  **FULL CREDIT:3rd level**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris **3rd level** |   **MATHEMATICAL LITERACY: QUESTION 5.3**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Video Game Score Board scoring 5.3**  **FULL CREDIT:9**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answeris 9 |   **MATHEMATICAL LITERACY: QUESTION 5.4**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Video Game Score Board scoring 5.4**  **FULL CREDIT:No along with valid reason**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer No as he need 1 point more to unlock 4th level |   **MATHEMATICAL LITERACY: QUESTION 5.5**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Video Game Score Board scoring 5.5**  **FULL CREDIT:1 point**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer**1 point** |   **MATHEMATICAL LITERACY: QUESTION 5.6**   |  |  | | --- | --- | | **FRAMEWORK** | **CHARACTERISTICS** | | **COMPETENCY CLUSTER** | **Reproduction** | | **OVERARCHING IDEA** | Quantity | | **CONTEXT** | **Personal** | | **ITEM FORMAT** | **Short response item** | | **COGNITIVE PROCESS** | Evaluate | | **PROFIENCY LEVEL** | **1** |   **CREDIT PATTERN**  **Video Game Score Board scoring 5.6**  **FULL CREDIT: (ii)**  **NO CREDIT:**other responses and missing   |  | | --- | | Give 2 points if the correct answer **(ii)** | |