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NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION (UPDATED)

CLASS - 5
Question Paper Code : UN489

KEY

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1. C	2. A	3. C	4. B	5. B	6. C	7. C	8. B	9. C	10. B
11. C	12. D	13. D	14. B	15. B	16. C	17. B	18. C	19. C	20. C
21. B	22. A	23. B	24. B	25. C	26. C	27. C	28. B	29. B	30. C
31. C	32. D	33. B	34. C	35. B	36. D	37. B	38. C	39. B	40. Del
41. B	42. A	43. B	44. C	45. B	46. B	47. B	48. A	49. B	50. C
51. C	52. C	53. D	54. C	55. D	56. D	57. B	58. A	59. C	60. D

SOLUTIONS

MATHEMATICS

01. (C) $95.8 \div = 13.685 = 13.7$

02. (A) 1 box = 10 pencil cases

 1 case = 7 pencils

 1 box = 10 × 7 = 70 pencils

 No. of boxes needed to pack 350 pencils = 350 ÷ 70

 = 5 boxes.

03. (C) Total no. of pages = 800

 No. of pages read by Mayank in 1 day = $\frac{1}{8} \times 800 = 100$

 No. of pages read in 2 days = 100 × 2 = 200

04. (B) Area of square garden

 = 12 × 3 = 36 m^2

 The area of his square garden is 36 m^2

05. (B) 12 × 8 = 96 (remaining cupcakes)

 96 + 24 = 120

06. (C) 40 + 21 = 61

 100 − 61 = 39 (remaining apples)

 39 ÷ 3 = 13

07.	(C)	Jackie made 2 pies in 30 minutes

07. (C) Jackie made 2 pies in 30 minutes

Number of pies made by Jakie in one hour

= 3 min × 20

= 2 pies × 20

= 40 pies

Likith made 3 pies in 2 minutes

Likith made pies in one hour

= 2 min × 30

= 30 × 30

= 90

Both made pies = 40 + 90 = 130

08. (B) Capacity of oil bought by Mrs. Shanvi

Capacity of oil used = $\dfrac{7}{\cancel{12}_{1}} \times \cancel{108}^{9} = 63\,l$

Capacity of oil left = $108\,l - 63\,l = 45\,l$
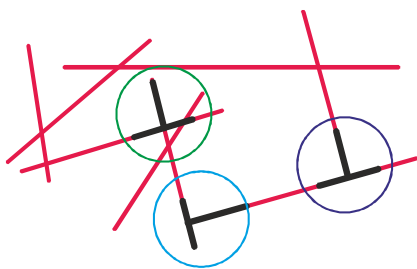
09. (C)

10. (B) Amount with Mrs. Sneha = ₹140

Amount given to her son = 40%

= $\dfrac{\cancel{40}}{\cancel{100}} \times 140$ = ₹56

Amount given to her brother = ₹14

= ₹56 + ₹14 + ₹70

Amount left with Mrs. Sneha

= ₹140 − ₹70 = ₹70

Percentage of her left money

= $\dfrac{70}{140} \times 100$ = 50%

11. (C) Common multiple of 7 and 10 is 70

12. (D) The longest side = 15 cm = 5 units

∴ 1 unit = $\dfrac{15}{5}$ cm = 3 cm

Hence, 3 units = 9 cm and 4 units

= 12 cm

Therefore, perimeter of the triangle

= (9 + 12 + 15) cm = 36 cm

13. (D) $\dfrac{1}{6} + \dfrac{5}{12} = \dfrac{2}{12} + \dfrac{5}{12} = \dfrac{7}{12}$

$1 - \dfrac{7}{12} = \dfrac{5}{12}$

She ate $\dfrac{5}{12}$ of the egg puffs

14. (B) Multiples of 3 = 3, ⑫, 15, 18, 21, ㉔, 27, 30

Factors of 24 = 1, 2, 3, 4, 6, 8, ⑫ & ㉔

The number between 8 and 20 = 12

12 is a multiple of 3 and also a factor of 24

15. (B) Mass of grapes with Manisha = 32 kg

Mass of grapes given away = 10.12 kg

= 32 kg − 10.12 kg

Mass of grapes left with Manisha

= 21.88 kg

Mass of grapes with Nisha

= 21.88 ÷ 4 = 5.47 kg

16. (C) 4 hundreds, 14 tens, 4 tenths and 14 hundredths

= 400 + 140 + 0.40 + 0.1400 = 540.54

17. (B)
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 6 pencils + 3 rulers = ₹12.90
 3 pencils + 3 rulers =  ₹6.90
 ─────────────────────────────
     3P        =    ₹6.00
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3P = 3R + ₹6.90

3 × 2 + 3R = ₹6.90

3R = ₹6.90 − 6

3R = ₹0.90

R = $\dfrac{0.90}{3}$ = ₹0.30

18. (C) Fraction of the wrapping paper left

$$= 1 - \frac{1}{3} - \frac{1}{6} = 1 - \frac{4}{6} - \frac{1}{6} = \frac{1}{6}$$

6 units → 9 ÷ 6

Number of units of wrapping paper left = 1 unit

1 units → 9 ÷ 6

$$= \frac{9}{6} = \frac{6}{6} + \frac{3}{6} = 1 + \frac{1}{2} = 1\frac{1}{2} \text{ m}$$

Mrs. Nissi had $1\frac{1}{2}$ m of wrapping paper left

19. (C) Perimeter of the rectangle = $2(l + b)$

= 2(22 m + 15 m)

= 2 × 37 m = 74 m

Total distance jogged by pranar

= 74 × 4 = 296 m

20. (C) Height of A = $\frac{4}{3}$ × 1.2 m = 1.6 m

21. (B) Average = $\frac{66 + 14 + 16}{8}$ years

$\frac{96}{8}$ years = 12 years
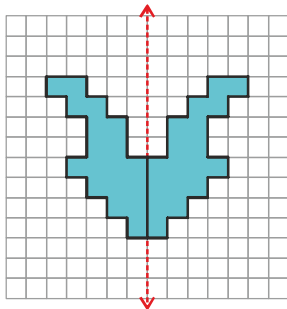
22. (A)

23. (B) Largest 5-digit number less than 11,000 where the hundred's place digit is twice the ten's place digit.

24. (B) 1515 is not a palindrome.

25. (C) Perimeter of square 4s = 55.6 cm

s = $\frac{55.6 \text{ cm}}{4}$ = 13.9 cm

GENERAL SCIENCE

26. (C) The human heart has 4 chambers

27. (C) Leaf is called the food factory of the plant.

28. (B) Animals shown in the box are vertebrates or with back bones. Snake is a vertebrate.

29. (B) Microscope is used to observe tiny things like germs.

30. (C) Rice and cotton are kharif crops.

31. (C) The given figure shows vegetative reproduction in bryophyllum. Leaf buds at notches of bryophyllum grows into a new plant.

32. (D) Blood transport oxygen, nutrients, hormones, regulate body temperature and defend the body.

33. (B) Sunflower, mustard and groundnut yield oil.

34. (C) Stratosphere layer prevents UV rays.

35. (B) X is granite

36. (D) Wheat, mustard, maize and gram are rabi crops.

37. (B) Sandstone, Limestone, Shale are sedimentary rocks.

38. (C) a-iv; b-i; c-ii; d-iii

39. (B) S is cerebellum. It controls balance of body.

40. (Delete)

41. (B) X is gas.

42. (A) Drying of wet floor involves evaporation of water from the floor.

43. (B) Orion is the constellation, which was named after a hunter in greek mythology.

44. (C) The simple machine represented by letter 'A' is pulley.

45. (B) Nitrogen constitutes 78% of atmospheric air, oxygen constitutes 21% of atmospheric air and other gases constitute remaining 1% of the atmospheric air in which carbon dioxide contribute 0.03%.

46. (B) Ozone is present in stratosphere layer of atomosphere.

47. (B) Eicchornia and strawberry both use stem buds for natural vegetative reproduction.

48. (A) X could be a non-infectious disease such as anaemia, rickets, scurvy, etc. Y could be an infectious disease that is not transmitted through a vector, such as measles, cold. Z could be an infectious disease that is transmitted through a vector, such as plague, dengue, malaria, etc.

49. (B) Diarrhoea, thyphoid and cholera sprad by infected food and water. Malaria and plague are transmitted by insect bites. Flu spreads by air. Chicken pox and measles spread through direct contact.

50. (C) Roughage is the fibres present in the plant food, like vegetables, fruits and grains. Roughage adds bulk to the undigested food and helps the body to get rid of waste. Cabbage is a good source of roughage.

51. (C) The medulla controls all over involuntary activities such as heartbeat, breathing etc.

52. (C) Joint at Q and T are called hinge joints.

53. (D) Frog can breathe through lungs as well as skin.

54. (C) Whales and dolphins breathe through lungs.

55. (D) Deficiency of calcium leads to pain in bones of legs and hand.

CRITICAL THINKING

56. (D) The black cube is not visible in the original picture

Back view

Left side view Front view Right side view

Top view
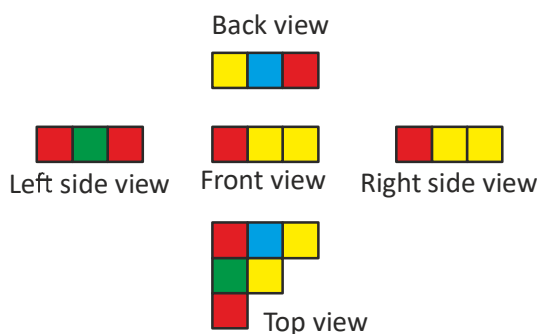
You cannot see the yellow cubes from the left side.

57. (B) Option (A):

42685

Option (B):

98542

Option (C):

26847

Option (D):

65742

58. (A) Apple + orange = pear + peach ____ ①

Apple + pear < orange + peach ____ ②

pear + orange < apple + peach ____ ③

Adding ① & ②

Apple + ~~Orange~~ + Apple + ~~Pear~~ < ~~Pear~~ + Peach + ~~Orange~~ + Peach

2 Apple < 2 Peach

Apple < Peach _____ ④

Adding ② & ③

~~Apple~~ + Pear + Pear + ~~Orange~~ < ~~Orange~~ + Peach + ~~Apple~~ + Peach

2 Pear < 2 Peach

Pear < Peach _____ ⑤

Adding ③ & ①

~~Pear~~ + Orange + ~~Apple~~ + Orange < ~~Apple~~ + Peach + ~~Pear~~ + Peach

2 Orange < 2 Peach

Orange < Peach _____ ⑥

From ④, ⑤ & ⑥ we get Peach is the heaviest among the fruits.

∴ peach is heaviest among the fruits.

59. (C) Ⓢ Q U V R T Ⓟ

∴ S live in second corner.

60. (D) So that each circle contains one each of the four suits, clubs, spades, hearts and diamonds.