ALL INDIA SAINIK SCHOOLS ENTRANCE EXAMINATION: 2012

PAPER- MATHEMATICS, GK, LANGUAGE AND INTELLIGENCE TEST

CLASS- VI

TIME: 2 hrs 30 minutes

Max. Marks: 300

Instructions

- This question paper contains FOUR sections and you have to answer all questions in the OMR answer sheet section "A" Mathematics contains 50 questions of 3 marks each, Section "B" GK, Section "C" Language and "D" Intelligence contains 25 questions of 2 marks each respectively. Section C is language specific and is to be attempted in the chosen language.
- 2. There is only one correct answer for each question. Darken only one bubble for each question. If you darken more than one bubble, your answer will be treated as wrong.
- Evaluation of OMR answer sheet will be done on a computer. Be careful and ensure no unnecessary marks on the OMR answer sheet / fold or attempt to deface the OMR answer sheet, otherwise it will not be evaluated.
- 4. Rough work must be done on the additional sheet only and NOT on OMR answer sheet.
- 5. There are total 32 pages in the question paper.

Paper-I Mathematics and Language Part-A: Mathematics Section-I

- Write the smallest and greatest five digit numbers using 5, 0, 3, 7 and 4.A
 Ans.: Smallest number = 30457
 Greatest number: 75430
- 2. Find the product of 7765 and 137.



3. Find lowest common multiple of 2, 4 and 5.

L.C.M = 2 X 2 X 5 = 20 Hence L.C.M. of 2, 4 and 5 = 20

4. Find the value of $\frac{3-7}{7}$

Ans.:
$${}^{3}\frac{5}{7}$$
. $=\frac{26}{7}$
5. Find the sum of ${}^{1}\frac{3}{5}$ and ${}^{2}\frac{7}{10}$.
Ans.: $1\frac{3}{5} + 2\frac{7}{10} = \frac{8}{5} + \frac{27}{10}$



6. A lawn tennis match starts at 9 : 15 am and finishes at 4 : 10 pm. Find the duration of the match.

Ans.: Duration of the match = hours minute 16 10 -9 15 6 55

Hence, required time = 6 hrs 55 minutes

7. Convert 2222 hours into days and hours.

Ans.: $\frac{2222}{24}$ = 92 days and 14 hours Hence, 2222 hrs = 92 days and 14 hrs

8. Which of the following can be the angles of a triangle?
a) 90°, 70°, 20°
b) 105°, 35°, 40°

Ans.: (a) Right angles triangle(b) Obtuse angle triangle

9. Simplify :
$$\frac{11}{12} + \frac{15}{16} - \frac{13}{24}$$
.

Ans.:
$$\frac{11}{12} + \frac{15}{16} - \frac{13}{24} = \frac{44 + 45 - 26}{48}$$
$$= \frac{89 - 26}{48} = \frac{63}{48} = \frac{21}{16} = 1\frac{5}{16}$$

10. Find the radius of a circle whose circumference is 79.2 cm. Given that $\pi = 22/7$.

Ans.: C=
$$2\pi r$$

 $79.2 = 2 \times \frac{22}{7} \times r$
 $r = \frac{79.2 \times 7}{2 \times 22} = \frac{7 \times 3.6}{2} = 7 \times 1.8 = 12.6 \text{ cm}$

Section-II

 \mathbf{v}

11. State True or False:

- a) The sum of four angles of a quadrilateral is 360°.
- b) A line segment has one end point.
- c) Every natural number is whole number.

Ans.:

- (a) T
- (b) F
- (c) T.

1

12. Find the interval between 7.25 AM and 3.10 PM.

13. If the average of 14, 17, 21, 24, 26 and X is 20, then find the value of X.

Ans.: Average = $\frac{14+17+21+24+26+x}{6}$

$$20 = \frac{x + 102}{6}$$

X+ 102 = 120
X = 120 - 102 = 18

14. Jubaida took a loan of Rs. 4000/- on 12% annual interest. After 3 years how much money she will have to return?

Ans.: $SI = \frac{P \times R \times T}{100} = \frac{4000 \times 12 \times 3}{100}$

= 36 X 40 =1440

15. Add 3 hours 50 minutes 55 seconds to 4 hours 55 minutes 30 seconds.

Ans.:	Hours	Minutes	Seconds
	3	50	55
+	4	55	30
_	8	46	25

Hence required sum = 8 hrs 46 minutes and 25 seconds.

16. A carpet is 5m.50cm. long and 3m.5m. broad. The carpet is surrounded by a lace. Find the length of the lace.

Ans. : Perimeter of the carpet = 2 (5.5. + 3.25) = 2(8.75) = 17.50 m ∴ Length of the lace = 5.50 + 3.25 + 5.50 + 3.25 = 17.50 m = 17 m and 50 cm

- 17. John plans to tile his kitchen floor with square tiles. Each side of the tile is 10 cm. His kitchen is 2.2 m long and 1.8 m wide. How many tiles will John need?

Ans. : length of the kitchen = 2.2 m = 220cm Breadth of the kitchen = 1.8 m = 180cm Area of the kitchen = 220 x 180 sq cm Area of each sq tile = 10 x 10

= 100 sq cm

Number of tiles = $\frac{220 \times 180}{100}$ = 396

18. A pond is 5 m long, 4 m wide and 2.5 m deep. How much water does it contain?

Ans.: volume of water in pond = l x b x h= 5 x 4 x 2.5 = 50 m³

19. A shopkeeper earns a profit of Rs. 80 by selling an article for Rs. 490. Find the cost price of the article.

Ans.: SP of the article = Rs 490 Profit = Rs 80 Hence C.P of the article = 490-80 = Rs 410

20. The circumference of a circle is 22 cm. Find the radius of the circle.

Ans. : Circumference of a circle =
$$2 \pi r$$

$$22 = 2 \times \frac{22}{7} r$$

$$r = \frac{22 \times 7}{2 \times 22} = \frac{7}{2} = 3.5 \text{ cm}$$

Section-III

21. Ashok got 366 marks out of 600 and Brij Mohan got 300 marks out of 500. Whose score is better. Also find their per cent of marks.

Ans.: Ashok's marks =
$$\frac{366}{600} = 0.61$$

% marks of Ashok = $\frac{366}{600} \times 100 = 61$
Brij Mohan's marks = $\frac{366}{500} = 0.60$

% marks of Brij Mohan = $\frac{366}{500} \times 100 = 60$ Clearly Ashok's score is better.

22. Solve

- (a) 25.43 × 4.61
- (b) 526.880 ÷ 3.2

Ans.: (a) $\frac{2543}{100} \times \frac{461}{100} = \frac{1172323}{10000} = 117.2323$

(b)
$$\frac{526.880}{3.2} = \frac{526880}{1000} \times \frac{10}{32}$$

= $\frac{52688}{10 \times 32} = \frac{3293}{20} = 164.65$

23. Arrange the following fraction is descending order: 5/8, 5/6, 2/7, 1/4, 1/2, 1/3.

Ans.:
$$\frac{5}{8}, \frac{5}{6}, \frac{2}{7}, \frac{1}{4}, \frac{1}{2}, \frac{1}{3}$$

LCM of 8, 6, 7, 4, 2, 3 = 168

105,140,48,42,84,56 168

Hence $\frac{5}{6}$, $\frac{5}{8}$, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{7}$, $\frac{1}{4}$ are in descending order.

24. . Find out perimeter and area of the given diagram.



Ans.: perimeter of the given figure = 12 + 22 + 12 + 6 + 15 + 10 + 15 + 6= 98 cm Area of the given diagram $= 10 \times 15 + 12 \times 22$ $= 150 + 264 = 414 \text{ cm}^2$

25. A, B and C have a total Rs. 4,600/-. The ratio of the money between B and C is 3:5. If share of A is Rs. 1,400/- then find shares of B and C. whose share is minimum?

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Ans.: total amount = rs 4600
     A's share = rs 1400
    Hence B's and C's share = 4600 - 1400
                             = rs 3200
       3x + 5x = 3200
       8x = 3200
       X= 400
       B's share = 3 \times 400 = rs 1200
       C's share = 5 \times 400 = rs 2000
Hence B's share is minimum.
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26. In a class the height of 6 students are 162 cm, 170 cm, 158 cm, 160 cm, 170 cm and 165 cm, respectively. Find the average of their height. How many students are having more than average height?

162 + 170 + 158 + 160 + 170 + 165**Ans.**: Average height = 6 $=\frac{985}{164.16}$ cm

27. Average of 9 numbers is 24. If the average of first 5 numbers is 23 and that of the last 5 is 26, find the fifth number.

Ans.: according to the question, 24x9 = 216 5x26 = 115 5x26 = 130Hence fifth number = (115+130) - 216 = 245 - 216 = 29.

28. Capacity of two types of containers is 6.5 litres and 9.5 litres, respectively, How much oil will be required to fill 6 tins of first type and 8 tins of second type of containers?

Ans. : required oil = (6 x 6.5 + 8 x 9.5) litres = (39 + 76) litres = 115 litres

29. A swimming pool of 90 m. length and 60 m. breadth is to be laid with tiles of length 30 cm. and breadth 20 cm. Find the number of tiles required. Also find the total cost of 100 tiles is Rs. 525.

Ans. : area of swimming pool = 9000 x 5000 cm² Area of each tile = 30 x 20 cm² Number of tiles = $\frac{9000 \times 5000}{30 \times 20}$ = 75000

> Cost of 100 tiles = Rs 525 Cost of 75000 tiles = Rs $\frac{525 \times 75000}{100}$ = 393750

30. How many stones of 0.50 m² can be fixed in a court yard of length 15 m and width 10 m. If cost of fixing one stone is Rs. 2.50, what will be the expenditure on fixing stones in the courtyard?

Ans. : area of court yard = $15 \times 10 \text{ m}^2$ Area of 1 stone = 0.50 m²

Number of stones = $\frac{15 \times 10}{\frac{1}{2}}$ $= 15 \times 10 \times 2 = 300$ Cost of 1 stone = Rs 2.50 Cost of 300 stones = Rs 300 x 2.50 = Rs 750

Part-B : Language

1. . Write an essay in 15 sentences on any one of the following topics:

- (a) A visit to Zoo
- (b) My Favourite Sport

Ans.: (A) A Visit to Zoo

A visit to zoo is quite interesting. It has an educative and recreational value too. It gives us practical knowledge of different types of animals and birds. I along with my classmates had a chance to visit a zoo in Delhi.

Our class-teacher bought entrance tickets and we went into zoo. First of all we saw a Lion inside a cage. He looked weak but still roared and moved about here and there. In the next cage, there were some monkeys, who were chattering and making nice gestures. They jumped from one bar to another. We threw grains and corns etc. and they readily accepted.

At a short distance, there was a pond of water, where some ducks, sw**Ans.** and cranes were swimming. Crocodiles and rhinos were also lying in the adjacent ponds. Next we saw different kinds of animals like zebras, kangaroos, ostriches, camels, elephants, wild-horses, neel-gais, cheetahs and tigers etc. peacocks were also dancing while sparrows of various colors and beautiful parrots were twittering. Lastly we saw cobras and poisonous snakes; some lying on ground, while others were entering holes nearby.

2. Read the following passage and answer the questions:

My own recollection is that I h ad not any high regard for my ability. I used to be surprised whenever I won prizes and scholarships. But I very jealously guarded my character. The least little blame drew tears from my eyes. When I merited, or seemed to the teacher to merit, a scolding, it was unbearable for me. I remember having once received physical punishment. I did not so much mind the punishment, as the fact I considered it as my dessert. I wept piteously. That was when I was in the first or second standard (M.K. Gandhi)

- (a) What kind of regard did M.K. Gandhi has for his ability? **Ans.**: M.K. Gandhi had no high regard for his ability.
- (b) How did M.K. Gandhi guard his character? **Ans.** : M.K. Gandhi jealously guarded his character.
- (c) What was unbearable for him?Ans. : A scolding was unbearable for him.
- (d) What did M.K. Gandhi do when once he received physical punishment?
 Ans. : M.K. Gandhi wept bitterly when he received physical punishment.
 (e) In which class was he studying at that time?
 Ans. : He was studying in first or second class at that time.
- 3. Make a sentence of your own for each underlined word given in the following passage. (Do not copy any sentence from the given paragraph):

The next evening, my mother told me that she had spotted another egg. Wonderful news! This meant we had a regular visitor. I have always <u>longed</u> for a pet, now I was lucky to own one! The next evening I <u>noticed</u> another egg and I was sure of our friend's <u>intentions</u>. She had decided to make our roof her home! The following day was the most memorable – there were four eggs.

(a)
(b)
(c)
(d)
(e)

Ans. :

a) He easily spotted the lost coin.

- b) He always longed for this chance.
- c) She noticed a great change in him.
- d) His intentions were quite clear.
- e) The tour to Agra was really memorable.

4. Form meaningful sentences by rearranging the words in proper order-

- (a) Go/shall/tomorrow/we/picnic/for
- (b) to/your's/school /do/how/go
- (c) mistake/for the /his/teacher/boy/punished
- (d) plants/the/is/gardener/watering/the
- (e) book? /which/your/is/favourite.

Ans. :

- a) We shall go for picnic tomorrow.
- b) How do you go to school?
- c) Teacher punished the boy for his mistake.
- d) The gardener is watering the plants.
- e) Which is your favorite book?
- 5. Use each of the following words in separate sentences of your own to show the difference in the meaning of the pairs given below:
 - (a) Write, Right
 - (b) Steel, Steal
 - (c) Two, Too
 - (d) Sheet, Seat
 - (e) Rain, Reign

Ans. :

- a) Write your name clearly. Always eat with your right hand.
- b) The machine was made of steel. Never steal anything.
- c) One and one make two. She is too shy to talk.
- d) Write on a sheet of paper. Sit properly on your seat.
- e) It may rain tonight.

The king's reign was peaceful.

6. Change each of the following as directed:

- (a) Without effort nothing can be gained. (Change into Interrogative)
- (b) By this time tomorrow I shall have reached home. (Change into Negative)
- (c) The moonlight very sweetly sleeps upon this bank. (Change into Exclamatory)
- (d) If only I had a good horse! (Change into Assertive)
- (e) Shall I ever forget those happy days? (Change into Assertive)

Ans. :

- a) Can anything be gained without effort?
- b) I shall have not reached home by this time tomorrow.
- c) How sweetly moonlight sleeps upon this bank!
- d) I wish, I had a good horse.
- e) I will never forgot those happy days.
- 7. Fill in the blanks by using the correct form of verb given in bracket:
 - (a) He a letter to his father yesterday. (Write)
 - (b) The cat on the rug. (Sleep)
 - (c) Cocks in the morning. (Crow)
 - (d) I have already my application to the Principal. (Send)
 - (e) The Moon early last night. (Rise)

Ans. :

- a) He had written a letter to his father yesterday.
- b) The cat has slept on the rug.
- c) Cocks crow in the morning.
- d) I have already sent my application to the Principal.
- e) The moon had risen early last night.

- 8. Choose the correct article (a, an or the) and fill in the blanks.
 - (a) He is honourable member of the society.
 - (b) He looks as stupid as owl.
 - (c) Let us discuss matter seriously.
 - (d) Yesterday European came to visit our school.
 - (e) You are fool to say that.

Ans. :

a) An

- b) An
- c) The
- d) A
- e) A

9. Write antonyms of the following words :

- (a) Young
- (b) Warm
- (c) Comfort
- (d) Happy
- (e) Big

Ans.:

- a) Old
- b) Cool
- c) Discomfort
- d) Sad
- e) Small

Paper-II : Intelligence Test

Directions (Qs. 1 to 10): For each of the following questions, four words have been given of which three are alike in some way and one is different. Find the odd word.

- 1. (a) Blue (b) Red
 - (c) Yellow (d) Dark

Ans.: (d): Except (d), others are colours, while dark is the attribute of a colour.

- 2. (a) Writer (b) Actor
 - (c) Singer (d) Dancer

Ans. : (a): Except (a), others are professional workers, while writer is a creator

3. (a) Cactus (b) Rose (c) Lotus (d) Sunflower

Ans. : (a) Except (a), others are flowers, while cactus is a leafless plant.

- 4. (a) Football (b) Cricket
 - (c) Chess (d) Hockey

Ans. : (a) Except (a), others are played by hands, while football is played by feet.

5. (a) Sun (b) Moon (c) Venus (d) Earth

Ans. : (b) Except (b), All the term except 'Moon' are related to the Solar system.

6. (a) Microphone (b) Microscope(c) Spectacles (d) Telescope

Ans. : (a) All the terms except 'Microphone' are related to the vision.

7. (a) Artery (b) Ventricle(c) Pharynx (d) Aorta

Ans. : (c) Except Pharynx all other terms are related to heart.

8. (a) Diamond (b) Ruby(c) Emerald (d) Turquoise

Ans. : (a) Except Diamond, all the jewels contain some colour in it.

9. (a) Crimson (b) Scarlet (c) Vermilion (d) Cardinal

Ans. : (d) Except ' Cardinal' all the terms are rrelated to colours.

10. (a) Swim (b) Run (c) Anticipate (d) Dance

Ans. : (c) Except 'Anticipate' all the terms are related to body movement or exercise.

Directions (Qs. 11 to 15): In the following questions, numbers given in four out of the five alternatives have same relationship. You have to choose the one which does not belong to the group.

11. (a) 4 (b) 8 (c) 16 (d) 9 (e) 25

Ans. : (b) All other numbers are square of natural numbers.

12. (a) 125 (b) 216 (c) 27 (d) 121 (e) 1

Ans.: (d) All other numbers are cubes of natural numbers.

13. (a) 43 (b) 53 (c) 63 (d) 73 (e) 83

Ans.: (c) All other numbers are prime number.

14. (a) 26 (b) 124 (c) 728 (d) 64 (e) 83

Ans. : (d) All other numbers are one less than the cube of natural numbers.

15. (a) 22 : 8 (b) 24 : 20 (c) 32 : 15 (d) 14 : 17 (e) 91 : 82

Ans. : (c) Second number is the sum of the square of the digits of first number.

Directions (Qs. 16 to 20): In each of the questions below, find out the correct **Ans.**wer from the given alternatives.

16. If in a certain language DISPEL is coded as IDPSLE, how is EFFECT coded in that language?(a) FEEFTC

- (b) CTFEEF
- (c) EFFETC
- (d) ECTEFF



Therefore



- 17. If in a certain language HUNTER is coded as UHNTRE, how is MANAGE coded in that code?
 - (a) MAANGE
 - (b) MNAAEG
 - (c) AMNAEG
 - (d) EGNAAM

Ans. : (c)Since







- 18. If RAMAYANA is coded as AMARANAY, how is TULSIDAS written?
 - (a) SLUTSADI
 - (b) UTSLIDSA
 - (c) SADISLUT
 - (d) SADITULS









19. If CANOE is coded as IFRRG, how is MUSIC written in that code? (a) NWVNI

- (b) MWVMH
- (c) NTULB
- (d) SZWLE

Ans.: (d): Since



Therefore



- 20. If HOBBY is coded as IOBY and LOBBY is coded as MOBY; then BOBBY is coded as
 - (a) BOBY
 - (b) COBY
 - (c) DOBY
 - (d) OOBY

Ans. : (b) Since





Directions (Qs. 21 to 25) : Write next four letters to complete the series.

- 21. COXTOCOXTO.... .
- 22. CCOXCOXC.... .

And

- 23. CCCOXCCOXCCOX.....
- 24. COXTVCOXTVCO.... .
- 25. COXTCOXXTT..... .

Ans. :

21. (COXT) : on writing COXT in the blank spaces, the sequence COXTOCOXTOCOXT is formed, in which COXTO is repeated partially three times.

22. (OXCC): On writing OXCC in the blank spaces, the sequence CCOXCOXCOXCC is formed.

23. (CCCO): On writing CCCO in the blank spaces, the sequence CCCOXCCOXCCOXCCO is formed, in which C is decreasing by 1, then remaining constant, and then increasing by 1.

24. (XTVC): On writing XTVC in the blank spaces, the sequence COXTVCOXTVCO-XTVC is formed, in which COXTV is repeated partially 4 times.

25. (COXX): On writing COXX in the blank spaces, the sequence COXTCOCCTTCOXX is formed, in which X and T are increasing by 1 only once.

Directions (Qs. 26 to 30): Complete the following series.

26. 5, 10, 13, 26, 29, 58, 61, ?
27. 2, 3, 5, 7, 11, ?, 17
28. 2, 9, 28, 65, 126, ?

29. 2, 9, 28, 65, 126, ?30. 3, 7, 15, 31, 63, ?

Ans. :

26. The numbers are alternately multiplied by 2 and increased by 3. Thus, 5x2=10, 10+3=13, 13x2=26, 26+3=29 and so on. answer is 61 x 2= 122

27. Clearly the given series consists of prime members starting from 2. The prime number after 11 is 13. So, 13 is our amswer.

- 28. The sequence is +6, +6, +8, +8, +10, So, answer is 43 + 10 = 53
- 29. The sequence is 1³+1, 2³+1, 3³+1, 4³+1, 5³+1 Missing number = 6³ + 1 = 216+1=217

30.Each number in the series is the preceding number multiplied by 2 and then increased by 1.

Thus, (3x2)+1=7, (7x2)+1=15, (15x2)+1=31 and so on. Missing number = (63x2)+1=126+1=127

Directions (Qs. 31 to 35): Each of the following questions consist of problem figures followed by answer figures. Select a figure from amongst the answer figures which will continue the same series or pattern as established by the problem figures. 31.











35





Ans. :

31.(c) Clockwise, the circle is turned by 30° and also one radial line segment is removed.

32.(d) The diagonal line segments are removed one by one in a set order.

33.(d) The 'V' shape on the top left is rotated 90° anticlockwise. The three figures at the bottom are shaded one at a time beginning from the right figure and moving to the left.

34.(d) The circle and the dot are moved two and three sections clockwise respectively.

35. (a) The cross is turned 90° clockwise at each step.

Directions (Qs. 36 to 40): The second figure in the first unit of the Problem Figures bears a certain relationship to the first figure. Similarly, one of the figures in the **Ans.**wer Figures bears the same relationship to the first figure in the second unit of the Problem Figures. Locate the figure which would fit the question mark.





36.(d) The triangle in the first figure is moved to the centre of the second figure. Similarly, the two triangles joined at the apex are moved to the centre in answer figure.

37.(d) The first figure is turned by 90° one of the bars is removed and opposite sides of the element attached to the bar are shaded to get the second figure.

38.(a) The element at the bottom is moved to the diagonal corner and the element in the top is enlarged and moves to the center and element is middle is reduced and moved to the bottom right corner.

39.(c) The view of the cube is changed from top to bottom. The design on the right side remains unchanged while the design on the left side is changed.

40.(d) The inner shape in the first figure is removed to get the second figure.

Directions (Qs. 41 to 45) : In each of the following questions one of the figures is different from the rest. Spot the figure.





Ans. :

41. (c) In all other figures the line with a circle and the two line segments are on opposite sides of the square.

42. (c) In all other figures the two line segments are drawn on same side from the corners of same line. In this figure they are drawn on opposite sides.

43. (c) All other figures are divided into four parts.

44. (d) Only in this figure the middle and the center shapes are opposite to each other.

45.(c) All other figures can be rotated into each other. In this figure the line segment is on the wrong side.

Directions (Qs. 46 to 50): In each question, which one of the alternative figures will complete the given figure pattern?

46. Pattern



Alternative figures



47.Pattern



Alternative figures

48.Pattern



Alternative figures



49. Pattern



Alternative figures



50. Pattern



Alternative figures



Ans.: 46 (b)



47. (a)



48.(d)



49.(d)



50.(a)

