ALL INDIA SAINIK SCHOOLS ENTRANCE EXAMINATION: 2015

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.
- 3. 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.

(CLASS-VI)

PAPER-1: MATHEMATICS AND LANGUAGE

PART-A: Mathematics

Section-1

(Each question carries two marks)

1. What is the LCM of two numbers if their HCF is 2 and the product is 112?

Sol. LCM = Product of numbers / HFC= 112/2 = 56

2. Write the Hindu-Arabic numerals for MDCL.

- Sol. M— 1000 D—500 C—100 L—500
- 3. John had $2\frac{1}{2}$ Cake. His friends ate $1\frac{2}{3}$ of the Cake. How much of the Cake is left?

Sol. Remaining cake = 5/2-5/3 = 15-10/6 = 5/6

4. The dimensions of a rectangular field are 36 m and 24 m. find the cost of fencing of the field if cost of wire is Rs.4.50 per meter.

Sol. Perimeter of the rectangular field = 2(1 + b) = 2(36 + 24) = 120 m. Cost of fencing of the field = Rs.9/2xl20 = Rs.9 x 60 = Rs.540

5. Find the average of first 9 prime numbers.

Sol. Average of first 9 prime numbers = $\frac{2+3+5+7+11+13+17+19+23}{9} = \frac{100}{9} = 11.1$

6. Simplify -

 $\frac{\frac{1}{5} \div \frac{1}{5} of \frac{1}{5}}{\frac{1}{5} of \frac{1}{5} \div \frac{1}{5}}$

Sol.

 -1^{1}

$$=\frac{\frac{1}{5} \div \frac{1}{5} \times \frac{1}{5}}{\frac{1}{5} \times \frac{1}{5} \div \frac{1}{5}} = \frac{\frac{1}{5} \div \frac{1}{25}}{\frac{1}{25} \div \frac{1}{5}} = \frac{\frac{1}{5} \times \frac{25}{1}}{\frac{1}{25} \times \frac{5}{1}} = \frac{\frac{5}{1}}{\frac{1}{5}}$$
$$= \frac{5}{5} \times \frac{5}{5} - 25$$

7. A train covers 20 m in a second. Convert speed of train in km/h.

Sol. Speed of train = $20 \text{ m/s} = 20 \times 18/5 \text{ km/hr} = 72 \text{ km/hr}$.

8. from the greatest and smallest 4 digit numbers with digit 9, 3, 7 and 1.

Sol. The greatest number = 9731

The smallest number = 1379

9. Mayank bought a ball for Rs 20. He sold it for Rs 30 and again bought it back for Rs 40. Again he sold it for Rs 50. Did he gain or lose? By how much did he gain or lose?

Sol. Total CP = 20+40 = Rs 60

Total SP = 30+50 = Rs 80 SP> CP he got profit.

Profit = SP-CP = 80-60 = Rs 20.

D

С

10. In the above figure if $\angle AOC = X$, $\angle COD = 2X$, $\angle BOD = 3X$, Find each angle in degree.



13. If the simple interest on Rs 12800 for a period of 2 yrs is Rs 3480, then find the rate of interest per annum.

Sol. Rate of interest = SIX100/pxt = 3840x100/12800x2 = 15%.

14. If the circumference of a circular park is 88 m, then find the area of the park.

Sol. C = $2\pi r$

 \Rightarrow 88 = 2 × $\frac{22}{7}$ × r

$$\Rightarrow$$
 r = $\frac{88 \times 7}{44}$ = 14 m

Area of the circular park = πr^2

$$=\frac{22}{7} \times 14 \times 14$$

$$= 22 \times 28 = 616 \text{ m}^2$$

15. Arrange the following in ascending order: 3/7, 4/5, 7/9, $\frac{1}{2}$ and 3/5.

Sol. 3/7 = 0.4, 4/5 = 0.8, 7/9 = 0.7, ½ = 0.5, 3/1 = 0.6

∴3/7, ½, 3/5, 7/9, 4/5 are in ascending order.

16. Mohan, a student of Class-V secured 315 marks out of **450.** Find marks in percentage.

Sol. Out of 450 marks Mohan got 315, out of 100 marks he got

17. In the given figure, what is the value of angles $\angle BAC(x^{\circ})$ and $CAD(y^{\circ})$?



Sol. In⊿*ABC*, X + 55° + 42° = 180 = X = 180°-97° = 83° = x + y = 180°⋅y = 180°-83° = 97°

18. Sachin saved Rs 400 each in the first and second months, Rs800 and Rs600in the third and fourth months respectively. Find average monthly saving over the four months.

Sol. Average monthly saving = 400+400+800+600/4 = 2200/4 = Rs550

19. If average (mean) of the following marks obtained by students of Class-V is 35. 264537 43 49 20 x 22 and 30. Find unknown mark *i.e.* x.

Sol. $\frac{x+26+45+37+43+79+20+22+30}{9} = 35$, = x + 272 = 35x9 = 315

= x = 315 - 272 = 43

20. Find $1 - 2 + 3 - 4 + 5 - 6 + \dots + 19 - 20$.

Sol. 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 - (2 + 4 + 6 + 8 + 10 + 12 + 14 + 16 + 18 + 20)

= 100 - 110 = -10

Section-3

(Each question carries five marks)

21. A rectangle and a square have the same perimeter 100 m. find the side of the square if the rectangle has a breadth 2 m less than that of the square. Find breadth, length and area of the rectangle.

Sol.

rectangle	squar			
100 m	100 m			

Perimeter of square = perimeter of rectangle

100 m = side of square = 100/4 = 25 m

Breadth of rectangle = 25-2 = 23 m, now 2(I + b) = 100 = I + b =

50

L + 23 = 50 = I = 27 m, area of rectangle = I x b = $27x23 = 621 \text{ m}^2$

22. Rakesh completes one round of a running track in 8 minutes and Saroj completes it in 6 minutes. How long will it take for both to arrive again at their starting point together, if they start running at the same time and maintain their speed?

Sol. LCM of 8 and 6 = 24

L.C.M. of 8 and 6 = 24 $\frac{2 \mid 8, 6}{\mid 4, 3}$ L.C.M. = 2 × 4 × 3 = 24 Hence, both will arrive together after 24 minutes.

23. Akshita's dad needed a loan of Rs 20,000 to buy a new car. Mr. Das, the Bank Manager agreed to give him the loan at 3% per annum. Irthe loan was to be paid back after 5 years, what total amount must he return to the bank?

Sol. P = RS 20,000

R = 3%

T = 5 years

$$A = p \left(1 + \frac{r}{100} \right)^t$$

- $= 20000 \left(1 + \frac{3}{100}\right)^5$
- $= 20000 \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100} \times \frac{103}{100}$
- $=\frac{23184069486}{100000}=23184.069486$

Required total amount paid = RS 23184

24. Find the value of 'x' for following figure if AB//CD.

SOL.



 $\therefore AB \parallel CD$ $\therefore \angle FCE = 180 - 100 = 80^{\circ}$ and $\angle EAG = 180 - 120 = 60^{\circ}$ $\angle CEH = 80^{\circ} \text{ (alternate angle)}$ $\angle AEH = 60^{\circ} \text{ (alternate angle)}$ $\therefore x = 80^{\circ} + 60^{\circ} = 140^{\circ}$

25. A supermarket sells 19 oranges for RS 114, 6 apples for RS 48, 22 pomegranates for RS 154

and 17 mangoes for RS 153. Which one of the fruits is the cheapest?

Sol. Cost of 1 orange = 114/19 = RS 6

Cost of 1 apple = 48/6= RS 8

Cost of 1 pomegranate = 154/22 = RS 7

Hence, orange is the cheapest fruit.

26. A rectangular grassy lawn measuring 48m by 35m is to be surrounded externally by a path,

which is 2.5m wide. Find the cost of levelling the path at the rate RS 4.50 per sq.m



Sol. 48m+5m = 53m

35m + 5m = 40m

Area without path = $48x35 = 1680m^2$

Area with path = $53x 40 = 2120m^2$

Area of path = $2120 - 1680 = 540m^2$

Cost of levelling the path = $540x9/2 = 270 \times 9 = RS 2430$

27. One number exceeds another number by 36. If sum of both number is 48. Find the numbers.

Sol. Let one number = :

Other number =
$$x + 36$$

 $X + x + 36 = 48$
 $2x = 48 - 36 = 12$
 $X = 6, x + 36 = 6 + 36 = 42$, numbers are 6 and 42.

28. Find the smallest number, having four different prime factors.

Sol. Required number = 2x3x5x7=210

29. What sum of money will produce RS 143 interest in $3\frac{1}{4}$ years at $2\frac{1}{2}$ % simple interest?

Sol. P = S.I X 100/ RXT = 143X100X2X4/13X5= 88X20= RS 1760

30. A brick measures 20cm by 10cm by $7\frac{1}{2}$ cm. How many bricks will be required for a wall

25m long, 2m high and 3/4m thick?

Sol. Volume of wall = I x b x h = 2500x200x3/4x100

= 2500x 150 x 100 cm³

Volume of each brick = $| x b x h = 20x 10 x 15/2 = 1500 \text{ cm}^3$

Number of bricks = 2500 x 150 x 100 / 1500 = 25000

PART-B: LANGUAGE ABILITY

1. Write 15 sentences on any one of the following topics - (15 Marks)

(a) My Favorite Sportsperson

(b) Festivals of India

Sol. 1. (B) Festivals of India

India is a land of festivals. The most famous festival in the Christian world is Christmas. The Mohammedans observe Id-ul-Fitr as one of their most important festivals. In India the most famous festival is the Diwali which though chiefly a Hindu festival, is celebrated by other communities also because of their beliefs. Diwali comes in October or November.

The Dussehra which precedes the Diwali by twenty days is another famous festival which is celebrated all over India. Holi which comes in February or March is also celebrated all over India, but most vehemently in North India. Báisakhi which often comes off on 13th April marks the beginning of harvest season and advent of the Hindu New Calendar. The harvest festival of Kerala is Onam which comes off in September. In Tamil Nadu, Pongal is the harvest festival which comes off in September. There are other festivals like Pushkar Mela at Pushkar in Rajasthan. It is celebrated in November. Vishwakarma Day is celebrated by the artisans on the day next to Diwali. Desert Festival is celebrated at Jaisalmer in Rajasthan during February. Surajkund crafts mela is held in Haryana in the same month i.e. February. There are Gurpurbs celebrated by the Sikhs. Similarly, there are other festivals like Lohri, Basant, etc and social days for other communities. There are also celebrations on more or less scale on days like Purnima, Amavas, Ekadishi, etc. In Kashmir we have the famous Amarnath yatra and Chhari Mubarak march.

2. Read the following passage carefully and answer the questions that follow: (15 Marks) Ants are the most interesting of all insects because they are so like human beings in many ways. They live in families; build their own houses, and have a king and a 'queen'. Each ant has its own work to do and it does its work well. The very young ants who have just come out of their cocoons are generally the nurses. When they are older and their skins are harder, they are ready to leave the nest and do other kinds of work. Some of the ants hunt for food. Most other kinds of insects go about looking for food, but it is always for them alone. But the ants think of the nest. They bring in food for the queen and other workers as well as for themselves.

(a) How are ants similar to human beings?

(b) What jobs are done by the very young ants?

(c) When do these very young ants leave the nest?

(d) Which word in the passage conveys the meaning 'a cover that keeps someone safe and warm'

(e) How are ants different from most other kinds of insects?

Sol. (a) Because they live in families, build their own houses, and do work like human beings.

(b) The very young ants do the jobs of nurses.

(c) When they are older and their skins are harder, then they leave the nest.

(d) Cocoon.

(e) Ant collects food for other ants also while most other kinds of insect do it just for themselves only.

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.) (10 Marks)

Laughter is indicative of joy. A man who <u>lauphs</u> radiates <u>happiness</u> and wins friends. Laughter can be the best tonic. A man, who cannot laugh fails to <u>ittrac1</u> friends, loses his <u>health</u> and deprives himself of any <u>pleasure</u> of life.

- (A)
- *(B)*.....
- (C)
- (D)
- (e)

Sol. (a) Never laugh at poor and deprived people.

- (b) Laughter is a sign of happiness.
- (c) Those who laugh often attract more friends.
- (d) Laughter also improves the health.
- (e) Laughter, happiness and pleasure are good for healthy life.
- 4. Rearrange the jumbled words to form meaningful sentences. (10 Marks)
- (a) newspapers/very important/day to day life/in our/have become
- (b) others/at/you/not/laugh/should
- (c) smiles/full of/tears/is/life/and
- (d) a/standing/the/fox/was/clever/tree/under
- (e) the/west/in/the/sets/sun

Sol. (u) Newspapers have come very important in our day to day life.

- (b) You should not laugh at others.
- (c) Life is full of tears and smiles.
- (d) The clever fox was standing under a tree.
- (e) The sun sets in the west

- 5. Give one word for the following: (5 Marks)
- (a) A doctor who does operations

(b) A bunch of flowers

.....

(c) A person who works with machines

(d) Happening once a year

(e) A house or shelter for a dog

.....

- Sol. (a) Surgeon
 - (b) Bouquet
 - (c) Engineer. Mechanic. Machinist
 - (d) Annual
 - (e) Kennel

6. Choose the correct word/phrase from the brackets and fill in the blanks: (10 Marks)

- (a) Hea new bicycle last week. (Bought, have bought, and had bought)
- (b) It..... since early morning. (Rained, is raining, has been raining)

(c) He...... TV most evening. (Do, have done, is watching)

(d) I...... A lot of work today. (Do, have done, had done)

- (e) He...... Fast when the accident happened. (Is driving, was driving, drove)
 - Sol. (a) Bought (b) has been raining (c) watch**es** (d) have done
 - (e) was driving

7. Use each of the word in separate sentences of your own to show the difference in the meaning of the words of the pairs given below: (10 Marks)
(a) Dairy, Diary
(b) There, Their
(c) Tail. Tale
(d) Peace, Piece
(e) Weight, wait

Sol. (a) We go to mother dairy to fetch milk.

I maintain a daily diary for record.

(b) There is a snake in the grass.

Their car broke down on the way.

(c) The dog was wagging its tail.

He narrated a long tale of a king.

(d) All religions teach us to live in peace.

I also ate a piece of cake there.

(e) Your body weight should be normal.

After a long wait I left the place.

8. Write opposite words for the following: (5 Marks)

(a) Win (b) Refuse

(c) Cruel (d) Ascending

(e) Give

Sol. (a) Lose (b) Accept (c) Kind (d) Descend in (e) Take

Sol. (a) Is it going to rain?

(b) Mr Mukherji doesn't know Chinese.

(c) He knew me well.

(d) How smart!

(e) The mouse was killed by the cat.

10. Your elder brother has sent you a birthday gift. write a letter of Thanks to him. (10 Marks)

Sol. Examination Hall. TUV City 6 march my dear Brother.

I thank you very much for the watch that you have just sent as my birthday gift. It is really a beautiful watch. It keeps correct time. 1 will never be late for college now. My friends also like it very much.

I request you to attend my birthday party in person the next year. Don't forget to bring the tids.

Your affectionate brother. ABC.

PAPER-2: INTELLIGENCE TEST

Directions (Qs. 1 to 5): out of the four choices. (A), (B), (c) and (D) given in each problem three an similar in one way. However one choice neither is nor like the other three. Choose the choice which is different from the rest and write the answer in the answer box.

1. (a) Open & close	(b) Hate & Dislike
<i>(e)</i> Rise & Fall	(d) Go & come
Sol. (b)	
2. (a) R5A1T6	(b) B2A1D4
(c) c3ESA1	(d) H8B2D4

Sol. (a)

- 3. (a) Far and Near
 - (b) Last and First
 - (c) Distance and Fare
 - (d) High and Low
 - **Sol.** (c)
- 4. (A) You (b) He (c) she (d) Am
 - Sol. (d)
- 5. (a) 699 (b) 789 (c) 773 (d) 798
 - Sol. (c)

Directions (Q. 6 to 9): In each of the following questions, arrange the letters of each word then find fourth letter.

6. ENKAL (A BODY PART)

Sol. ENKAL - ANKLE - 4th letter is L.

7. HCDNGRHAIA (A UNION TERRETORY)

Sol. HCDNGRHAIA – CHANDIGARH – 4^{TH} Letter in N.

8. HEPES (AN ANIMAL).....

Sol. HEPES – SHEEP – 4^{TH} Letter is E.

9. NEGOAR (A FRUIT)......

Sol. NEGOAR – ORANGE – 4^{TH} letter is E.

10. (a) Lion and Roar

- (b) Elephant and Trumpet
- (c) Snake and Hiss
- (d) Dogs and Cook

Sol. (d)

11. (a) Cow and Goat (b) Horse and Mare

(c) Dog and Bitch

(d) Cock and Hen

Sol. (a)

Directions (Qs. 12 to 15): Choose the right answer and write the

answer in the answer box.

- 12. Uncle is to Aunt as Cook is to
- (a) Fowl (b) Hen
- (c) Chicken (d) Duck

Sol. (b)

- 13. Wood is to table as is to coat
- (a) Shirt (b) Wear
- (c) Trouser (d) Cloth

Sol. (d)

- 14. Boy is to Girl as nephew is to
- (a) Uncle (b) Niece
- (c) Brother in law (d) Aunt Sol. (b)
- 15. Fish is to Bird as submarine is to
- (a) Ship (b) Train
- (c) Aeroplane (d) Car

Sol. (c)

- 16. Disease: Pathology:: Planet : ?
- (a) Sun (b) Stars
- (c) Astrology (d) Astronomy

Sol. (d)

- 17. Waiting : Boredom : : Education : ?
- (a) Class
- (b) Enlightenment
- (e) Schooling
- (d) Cunning
 - Sol. (b)
- 18. Light : Sun :: Heat : ?
- (a) Electricity (b) Moon
- (c) Fire (d) Star

Sol. (c)

Directions (Qs. 19 to 22): Below are given numbers/ alphabet

figures followed by 4 answer choices marked as A, B, C and D. Choose a correct answer option, which will continue the

series.

19. 246, 357, 468, 579

(a) 759 (b) 690

(c) 678 (d) 459

Sol. (b)



20. A/2, 4/C, E/6

(a) 8/G (b) 8/K

(c) 71G (d) 0/8

Sol. (a)

21. B,D,G,K

(a)P (b) A

(c)O (d) N

Sol. (a)



22. 1243, 2354, 3465 (a) 4576 (b) 4675 (c) 4796 (d) 4367

Sol. (a)



SOL. (B)



26. If CHAIR is coded as FKDLU, then RAID is

coded as:

- (a) IJLGD (b) ULKG
- (c) IJLDG (d) UDLG

SOL. (D)



27. If "grey" is called "brown", "white" is called "pink", "red" is called "grey", "black" is called "red", "brown" is called "white", what is the colour of "coal"?

(a) brown (b) red

(c) black (d) 'pink

SOL. (B)

28.If 5x8=28,3x712,8x635 then find the value of 13 x 13?

- (A) 169 (b) 130
- (B) 140 (d) 144
- SOL. (D)

 $5 \times 8 = (5 - 1) \times (8 - 4) = 4 \times 7 = 28$ $3 \times 7 = (3 - 1) \times (7 - 1) = 2 \times 6 = 12$ $8 \times 6 = (8 - 1) \times (6 - 1) = 7 \times 5 = 35$

Similarly,

 $13 \times 13 = (13 - 1) \times (13 - 1) = 12 \times 12 = 144$

29. If TOUR is written as 1234, CLEAR is written

as 56784 and SPARE is written as 90847, find the code for

CARE?

- (a) 1247 (b) 4847
- (C) 5247 (d) 5847

SOL. (D)

Letters :	Т	0	U	R	C	L	E	A	S	P
Code :	1	2	3	4	5	6	7	8	9	0

Hence, Code for 'CARE' is 5847.

30. If RAJI has been coded as TCLK, then what would be the code

(b)RAJT

(d) MNE

for KLCT?

(a)MENV

(C) MNFV

SOL. (D)

YOUNG STAR DEFENCE ACADEMY, AMRITSAR Contact For Admission: +918101313136 Sainik School, **Military School, RIMC** +2 +2 . +2 +2 Similarly, +2 +2 +2 +2 Directions (Qs. 31 & 32): Choose the word, which will come third in the dictionary and write the answer in answer box. 31. (a) Battalion (b) Barrister (c) Banana (d) Balance Sol. (c) (b) Decide 32. (a) Dear (d) Departure (c) Diagram Sol. (b) 33. 1f + means x, x means +, + means — and — means +. Find the value of 16 x 3 + 5 — 2 ÷ 4 (a) 19 (b) 10 (c)9 (d)13

Sol. (c)

- 34. What is common in hydrometer, lactometer and manometer?
- (a) They are units of measurement
- (b) They are instruments
- (c) They arc scales
- (d) They are equipments used in physics

Sol. (b)

35. What is common in Bauxite, Iron, Tungsten

and Monazite?

- (a) They are all minerals
- (b) They are all metals
- (c) They are all chemicals
- (d) None of these

Sol. (a)

Directions (Qs. 36-40): In each of the following sets of

Figures. Select the one that is different from the rest.

36.



Sol. (a) Except (a) in all others, the outer and inner figures are same.

37.



Sol. (a) Except (a) in all others, the first two outer figures are same

38.



Sol. (d) Except (d) all others have parallel lines inside.

39.



Sol. (c) Except (c) all others have similar figures inside as well as outside

40.



Sol. (c) Except (c) in all others, the outer and inner figures are the same.

Directions (Qs. 41.45): Each of the following questions consists

of unmarked figures followed by four figures mark (a), (b). (c)

and (d). Select a figure from the marked figures which will

continue the series established by the unmarked figures.

41. Problem figure



nswer Figures



Sol. (c) The dots move, 2, 3, 4, 5 steps respectively in a clockwise direction.

42. Problem figure





Sol. (c) The number of sides in each figure increases by one in each next figure.

43. Problem figures



Answer Figures



Sol. (d) The inner figures becomes the outer one and the outer figure disappears and

another figure comes inside in each subsequent figure.

44. Problem figure

Answer Figures



Sol. (b) The number of circles and the number of triangles increase in every alternate

figure

45.



Answer Figures



Sol. (d) One line in each figure changes to a curve up and down alternately.

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







Sol. (c)



