ALL INDIA SAINIK SCHOOLS ENTRANCE EXAMINATION: 2011

MATHS, ENGLISH, GENERAL SCIENCE, SOCIAL STUDIES AND INTELLIGENCE (CLASS IX)

Time: 3 Hrs.   **Max. Marks: 400**

Name of Full…………………………………………………………

Roll No. ……………………

_____

INSTRUCTIONS

1. This question paper contains FIVE sections and you have to answer all questions in the OMR answer sheet. Section "A" Mathematics contains 50 questions of 4 marks each. Section "B" English, Section "C" General Science, Section "D" Social Studies and Section "E" Intelligence contain 25 questions each with 2 marks per question.

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. Ensure no unnecessary markings are made on the OMR answer sheet. Do not fold or attempt to deface the OMR answer sheet. OMR sheets with multiple folds or defaced OMR sheet will not be evaluated.

4. Rough work must be done on the additional two sheets only and NOT on the OMR answer sheet.

5. Write your answer in Blue/Black ink only. Do not use pencil.

6. There are total 28 pages in the question paper including two pages for the rough work.

PART A MATHEMATICS

Directions (Qs. 1 to 20): Bear 2 marks each

1. Represent $\frac{5}{3}$ and $\frac{-5}{3}$ on the number line.

2. Evaluate the following:

$(24^2 + 7^2)^{1/2^3}$

3.   Three numbers are to one another 2 : 3 . 4. The sum of their cubes is 33967. Find the numbers.

4.   Multiply:

$(2x^2 - 4x + 5)$ by $(x^2 + 3x - 7)$

5.   If $x + \frac{1}{x} = 4$ find the value of $(x^2 + \frac{1}{x^2})$

6.   Factorise $4x^2 - 4xy + y2 - 9z^2$

7.   Solve $\frac{x+2}{3} - \frac{x+1}{5} = \frac{x-3}{4} - 1$

8.   Rahim's income is 25% more than that of Raman. What per cent is Raman's income less than Rahim's income?

9.   After allowing a discount of 12% on the market price of an article, it is sold for 880. Find its market price.

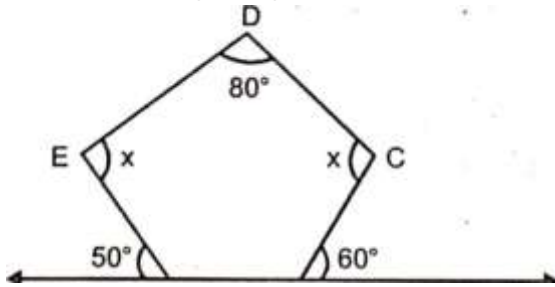10. Find the compound interest on 12,000 for 3 years at 10% per annum compounded annually.

11. One angle of a quadrilateral is 108^0 and the remaining three angles are equal. Find the three equal angles.

12. An unbiased Die is thrown. What is probability of getting an even number?

13. The multiplicative inverse of $-2\frac{5}{3}$ is:

   A. $\frac{11}{3}$ B. $\frac{3}{11}$

   C. $\frac{-3}{11}$ D. $\frac{-11}{3}$

14. Two positive numbers are in the ratio of 3 : 5. If they differ by 18, then the numbers are ..

   A. 27 & 45   B. 36 & 54

   C. 18 & 36   D. 45 & 63

15. A bag contains 8 black balls, 10 red balls and 12 blue balls. A ball is drawn from the bag without looking into the bag. The probability of getting neither a blue ball nor a black ball is :

   A. $\frac{11}{15}$ B. 1

   C. $\frac{2}{3}$ D. $\frac{1}{3}$

16. The smallest number by which 72 must be multiplied so as to get a perfect cube is :
A. 2   B. 3
C. 4   D. 5

17. The factors of x2- 6x- 16 are:
A. (x-8) and (x-2)   B. (x+8) and (x+2)
C. (x+8) and (x-2)   D. (x-8) and (x+2)

18. The diagonals of a rhombus are 8.5 cm and 14 cm respectively. Its area (in cm^2) is .

A 59.5   B. 119

C. 29.75   D. 22.5

19. In the Figure given below, find the value of x

20. Find the greatest 4-digit number which perfect square.

Directions (Qs. 21 to 40) : Bear 3 marks each.

21. Find 5 rational numbers $\frac{3}{5}$ between and $\frac{3}{4}$

22. Factorise: $(ax + by)^2 + (ay - bx)^2$.

23. Find 2/5 x -3/7- 1/14- 3/7 x 3/5

24. If $x + \frac{1}{x} = 3$ find the value of $(x^3 + \frac{1}{x^3})$

24. If a + b + c = 13 and $a^2 + b^2 + c^2 = 69$ evaluate ab + bc + ca.

25. If the area of a rhombus is 120 cm² and one of its diagonals be 10 cm. Find its perimeter.

26. Evaluate: $\frac{8^{1/3} \times 16^{1/3}}{32^{-1/3}}$

28. By selling 144 hens a person lost the Selling Price of 6 hens. Find the loss in percentage.
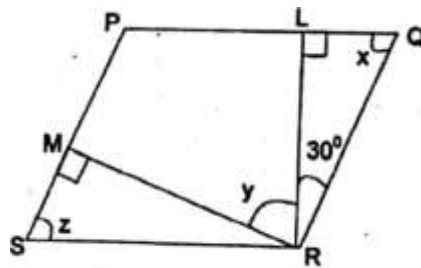
29. Evaluate: $\frac{729^{1/3}}{216} \times \frac{6}{9}$

30. Divide: $x^{3m} - y^{3n}$ by $x^m - y^n$

31. If 15 workers can build a wall in 48 hours, how many workers will be required to do the same work in 30 hours?

32. If the perimeter of a trapezium be 52 cm, its non-parallel sides are equal to 10 cm each and its altitude is 8 cm, find the area of the trapezium?

33. The area of the parallelogram with base 42 m is same as that of the triangle with base 63 m and height of the triangle is 36 m. Find the height of the parallelogram?

34. Find the least number which must be added to 893304 to obtain a perfect square?

35. Simplify (x + 2y) (1 + 3x + 4y) — 6y (x — y).

36. Find the height of a cylinder whose volume is 1.54 m ^{3} and diameter of the base is 140 cm. (Use π= 22/7)

37. Divide 34 into two parts in such a way that $\frac{4}{7}$ th of one part is equal to $\frac{2}{5} th$ of the other.

38. Rs.3500 is to be shared among three people so that the first person gets 50% of the second, who in turn gets 50% of the third. How much will each of them get?

39. Six typists working 5 hours a day can type the manuscript of a book in 16 days. How many days will four typists take to do the same job each working 6 hours a day?

40. A well with 10 m inside diameter is dug 14 m deep. Earth taken out of it is spread all around the well to a width of 5 m to form an embankment. Find the height of embankment?

Directions (Qs. 41 to 50): Bear 10 marks each.

41. Ram is thrice as old as Raju. 5 years ago Ram's age was 4 times Raju's age. Find their present ages.

42. In the following Fig., PQRS is a parallelogram. RL L PQ, RM L ps. If ZQRL = 30^0, find the values of angles: x.y.z.

43. Rajesh purchased a hairdryer for including 8% VAT (Value Added Tax). Find the price before VAT was included.

44. Simplify $\left(\frac{3x}{2} + 5\right)2 - \left(\frac{3x}{2} + 5\right)2$

45. The radius of a road roller is 49 cm and its length is 125 cm. How much area (in m^2) of a play ground will be leveled in 400 revolutions moving once over the ground? (Use $\pi = 22/7$)

46. A building 16 m tall casts a shadow of 6.4 m. Find the height of a building which casts a shadow of 1.6 m at the same time.

47. Half of the herd of deer are grazing in the field and three-fourth of the remaining are playing nearby. The rest of the 9 are drinking water from the pond. Find the number of deer in the herd.

48. A dealer buys an article for 380. At what price must he mark on it so that after allowing a discount of 5%, he still makes a profit of 25%?

49. Factorise and then simplify the expression : $\frac{39y3\ (50y2-98)}{26\ y2\ (5y+7)}$

50. Sunil is painting the wall and the ceiling of a cuboidal hall with length, breadth and height of 15 m, 10 m and 7 m respectively. From each can of paint 100 m^2 of area is painted. How many cans of paint will be needed to paint the room?

Part B Science

Note: Part 'B' bearing 75 marks, contains 37 questions. Q.No.1 to 15 carry one mark each, Q.No. 16 to 25 carry two marks each, Q.No. 26 to 35 carry three marks each, Q.No. 36 and 37 carry five marks each.

1. Yeast helps in the production of

   A. Sugar   B. Alcohol

   C. Oxygen   D. Carbon di-oxide

2. Glowing of an Electric lamp is not combustion because:
   A. Heat produced is not enough
   B. Light produced is too much

   C. It is a physical change

   D. It is not a chemical reaction

3. Carbon exists in amorphous form as :

A. Diamond

B. Graphite

C. Charcoal

D. Carbon mono-oxide

4. Out of the different types of fuels the one which is excellent is:

   A Solid fuel   B. Liquid fuel

   C. The Gaseous Fuel D. None of these

5. Pasteurization of milk destroys its:

A. Fat content

B. Vitamins

C. Pathogenic bacteria

D. Sugar content

6. The allotrope of carbon which is a good conductor of heat and is used as lubricant is :

   A. Lampblack

B. Finely powered charcoal

C. Graphite

D. None of these

7. Petrol or Gasoline is obtained by distillation of Petroleum at temperatures, between:

A. $150^0 - 300^0 C$

B. above $300^0 C$

C. $70^0\,900C$

D. above $400^0 C$

8. In a flame the un-burnt carbon particles are present in the:

A. Dark inner Zone

B. Luminous Zone

C. Non-luminous Zone

D. Blue Zone

9. The host of malaria causing protozoa is :
   A. Anopheles mosquito
   B. The cow
   C. The earthworm
   D. Air

10. Desert Plants are more likely to have:
    A. Large flat leaves
    B. Short root system
    C. Reduced leaves
    D. A large number of stomata

11. The process of heating ore in the absence of air below its melting point is called:
    A. Smelting   B. Roasting

    C. Calcinations   D. Decomposition

12. Hypermetropia is corrected by using:
    A. Concave lens   B. Convex lens

    C. Bi-focal lens   D. Plano-convex lens

13. Magnified virtual Image is produced by
    A. Concave Mirror

    B. Convex Mirror
    C. Plane Mirror
    D. Plano-convex Mirror

14. Which of the following is NOT a planet of the sun?
    A. Sirius   B. Mercury
    C. Saturn   D. Earth

15. Phases of the moon occur because:
    A.   We can see only that part of the moon which reflects light towards us.

    B. Our distance from the moon keeps changing.
    C. The shadow of the Earth covers only a part of the moon's surface.
    D. The thickness of the moon's atmosphere is not constant.

16. Write one difference between regular and diffused reflection of light.

17. How earthquake occurs? Write the name of the instrument which can measure earthquake.

18. What do you mean by force? Write one example where force is used to change the shape of an object.

19. Write two differences between manure and fertilizers.

20. Explain why plastic containers are favoured for storing food?

21. What is irrigation? What are the main sources of irrigation?

22. What is the angle of incidence of a ray if the reflected ray is at an angle of 90^0 to the incident ray? Draw Ray Diagram.

23. A pendulum oscillates 40 times in 4 seconds. Find out its time period and frequency.

24. Which Microbial diseases are called as communicable diseases?

25. What are the advantages of using CNG and LPG as fuels?

26. Explain how soil gets affected by the continuous plantation of crops in a field.

27. Explain the mechanism of Nitrogen fixation by bacteria and blue green algae.

28. Describe how coal is formed from dead vegetation. What is this process called?

29. Explain how C02 is able to control fires.

30. What are vaccines? Name two diseases caused by virus.

31. What is balanced diet? What are the main components of balanced diet?

32. A What do you mean by Electroplating?

B. Write any two application of Electroplating.

C. What you will add to the pure water so that it will conduct Electricity?

33. What are artificial satellites? Write one of its uses. Name two artificial satellites India had built and launched.

34. A What will happen to the net force when two different forces are acting on an object opposite to each other?

B. Write one example of a contact force.

C. Name two factors on which the pressure acted on any object depends.

35. What is noise pollution? Write any two harmful effects of noise pollution.

36. Explain why objects moving in fluids must have special shape?

37. Define the term Biosphere Reserve. What are National Park and Sanctuary? What is Red Data Book?

PART A: ENGLISH LANGUAGE

1. Read the given passage and answer the questions that follow:

The group of tired dusty riders arrived at a fork in the road. Their leader immediately sprang to the ground after first throwing his rein to one of the others, and began to examine minutely the sandy track. The problem was simple; if the fleeing enemy had taken the left turning, there remained little hope of catching them, since he knew that is led back to a small settlement of native huts where they should be sheltered by the friendly inhabitants. If, on the other hand, they had branched to the right, they would have before them the open desert, not a flat expanse of sand such as they had just crossed, but a country broken by series, behind any of which a whole army could hide. He turned to his companions to see if he could read any solution in their faces. But they were too occupied by their aching limbs and several were taking a quick drink from the flasks which hung at their belts. He realized every minute's delay lessened their chances of overtaking their adversaries. So, with a rapid glance at the sun, he jumped once more into the saddle and with his whip indicated the way they were to go.   (3 x3=9)

(a) Answer the following questions briefly:

(i) What, if any was the difference in the nature of the terrain they had already traversed and the one lying ahead?

(ii) What difficulties did they expect if they took the branch to the right?

(iii) Where and why did they stop?

(b) On the basis of your reading of the passage complete the following :
(6x1=6)

The group of………….(i) searching for their………. (ii). Their leader rode off   the horse and examined the ……(iii) track. He wanted to overtake his enemy but his followers ware taking a quick ……….(iv) finally with the rapid glance at the ………..(v). He jumped again into the……….(vi).

(c) What was the possibility to catch the enemy by the riders?   (5 Marks)

2. Write a short essay (not exceeding 100 words) on any one of the following topics:

(10 Marks)

(a) Naxalism: A Threat to Internal Security

(b) Word cup Cricket-2011

3. Write a letter to the editor of a national daily giving your views about the rising number of terrorist activities, in the country. (5 Marks)

4.   4.Choose the correct option and write the same in blank space: (10 Marks)

(a) The writing contains many……..ideas.

(i) vogue   (ii) vague

(b) The coachman……..the horse with a whip.

(i) Threshed   (ii) thrashed

(c) As the child grew into a young man the…….of his shirt at the shoulders got a light strains.

(i) seam   (ii) seem

(d) In the………..part of the year the company are often in a position to return the refunds or other dues.

(i) latter   (ii) letter

(e) A group of burglars a pedestrian with rods.

(i) battered   (ii)bettered

5. Rearrange the following words to form meaningful sentence (3 x 5 = 15)

    (a) she/lunch/hosted/a/party/later

    (b) care/is/aunt' s/under/her/baby

    (c) novel/hour/this/one/me/took

    (d) is/wise/foolish/penny/pound/he.

    (e) married/are/getting/not/today/they

6.   Fill appropriate preposition in the blanks.

    (a) I assured him……….my support.

    (b) What are your reasons…….. resigning?

    (c) The sentry is armed………. a gun.

    (d) The rod was cut…………   two.

    (e) I wish…….go home.

    (f) His strength consists………….his honesty.

    (g) Birds live……… trees.

    (h)He insisted………..me to go there.

    (i)He picks a quarrel every ………body.

    (j)I cautioned you…….. his tricks.

7.   Match words under A with their synonyms under B.   (5 Marks)

(a) Jolly   (i) Cruel

(b) Tame   (it) Untrue

(c) Callous (iii) Merry

(d) Liberty (iv) Gentle

(e) False   (v) Freedom

8.Give one word for the following: (10 Marks)

  (a)   A child whose parents are dead.

  (b)   A list of books in a library.

  (c)   One who spends very little.

  (d) Place where bees are kept.

(e) Living for ever.

9.Make new words by using, dom, en, ary, ness, at the suffix of the following words:

(5 Marks)

(a) Blind………
(b) Wis…………
(c) Sharp………..
(d) Honor………….
(e) Weak…………..

PART B- SOCIAL STUDIES

1. State True/False: (15<1 = 15)

(i) Bodh Gaya, the most sacred place of Buddhists is in Bihar. [True/False]

(ii) 'Satyameva Jayate' in the state emblem has been taken from Gita. [True/False]

(iii) The constitution of India was adopted on 26 January, 1950. [True/False]

(iv) Minimum age to quality for the President's post is 35 years. [True/Falsel

(v) Vikramaditya was the name given to Chandragupta Maurya. [True/False]

(vi) Sher Shah defeated Mughal king Babur. [True/False]

(vii) Din-I-lahi was launched by Akbar. [True/False]

(viii) Brahmo Samaj was founded by Dayanand Saraswati.   [True/False]

(ix)Champaran movement was meant for solving the problems of Indian farmers. [True/Fa1se]

(x)Bhagat Singh was hanged in the year 1931.   [True/False]

(xi) 'Liberty, Equality and Fraternity' was the slogan of Russian Revolution.

(xii) Magna Carta is a charter of rights.[True/Fa1se]

(xiii) Silk was introduced by Chinese. [True/False]

(xiv) The 'Sati' tradition was abolished by Lord give.   [True/False]

(xv) There is the great variations of vegetation in the Monsoon Region due to. variation in the amount of rainfall in different places.   [True/False]

Fill in the blanks (15X1=15)

(a)'Jog' the highest fall of India is located in_____(state)

(b)Dharival is the place associated with the industry of_____

(c)_____is known as the land of Golden fleece.

(d)The north-south extent of India is_____

(e)Mahatma Gandhi Setu is built over the river_____

(f)Indian Military Academy is located at_____

(g) Chanakya is also known as_____

(h)The bird that never makes its nest is_____

(i) Santa Cruz International Air Port is located at _____

(j)_____ is the largest producer of mica in the world.

(k)_____crop is sown in October and November and harvested in April.

(i) Vardhman Mahavir was the guru of_____

(m)'Dilli chalo was the slogan of_____

(n)Simon Commission came to India in_____

(o)The Ramayana was written by_____

3. Expand the abbreviations:
   (a) WHO   (b) SEZ
   (c) UNO   (d) CAG

(e) VAT   (f) BHEL

(g) PSLV   (h) NTPC

(l) ESRO   (J) GMT

4. Match the following by writing alphabet from column A with column B in the answer column.

A   B

(i) Kiel   (a) It was launched by Muhammad Ali and Shaukat Ali

(ii)Mixed Farming   (b) are heavenly bodies known for their tails

(iii)Isobar   (c) is the supreme commander of defense forces

(iv)Article 356   (d) is a fundamental right which cannot be suspended even during emergency

(v) Indian National Army   (e) This canal links North sea with Baltic sea

(vi)Khilafal Movement   (f) It is the fibrous material present in plants and their products

(vii)President of   (g) Line on the map India connecting places with the same atmospheric pressure

(viii)Comets   (h) Deals with constitutional emergency

(ix)Right to have   (i) When farming and animal husbandry are practiced on the same farm

(x) Roughage   (j) It was setup by Rash Bihari Bose

5.Write short notes on any five of the following topics: (5 x 5 = 25)

(a) Green Revolution

(b) Jallianwala Bagh Tragedy

(c) India's Moon Mission

(d) Food Chain

(e) Right to Education

(f) Smt. Pratibha Patil

(g) Wildlife Conservation in India

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