YOUNG STAR DEFENCE ACADEMY, AMRITSAR
Contact For Admission: +918101313136 Sainik School, Military School, RIMC

ALL INDIA SAINIK SCHOOLS ENTRANCE EXAMINATION: 2014

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.

Paper-I

Part- A Mathematics

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

1. Represent 4/8 and —7/4 on the number line.

2. Simplify: $\frac{3}{17} \div \frac{8}{17} \times \frac{2}{3} + (\frac{2}{7}) \times \frac{35}{33} \div (\frac{7}{11})$

3. The sum of two numbers is 15 and the sum of

their squares is 113. Find the numbers,

4. Multiply (a + 7) by (a^2 + 3a + 5).

5. If x+ $\frac{1}{x}$ =3 find the value of (x^2+$\frac{1}{x2}$)

6. Factorise: $25a^2$ — $4b^2$ + 28bc $49c^2$.

7. Solve: $\frac{2p - 3/4}{9p+4/7} = \frac{1}{4}$

8. Find the square root of 128881 by the division method.

9. Arun bought a pair of Skates at a sale where the discount given was 20%. If the amount he pays is 1600, find the marked price.

10. Find the Compound interest on 12600 for 2 yrs at 10% per annum compounded annually.

11. Two adjacent angles of a Parallelogram have equal measures. Find the measure of each of the angles of the Parallelogram.

12. An Unbiased Die is thrown. What is the Probability of getting an even number greater than 5?

13. Find the ratio of the circumferences of two concentric circles of radii 2 m and 3 m.

14.The median of the given data is:

133, 73, 89, 108, 94, 140, 94, 85, 100, 120.

(a) 97 (b) 79

(c) 94 (d) None of these

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

(a) 36 and 54 (b) 36 and 18

(c) 45 and 27 (d) 63 and 45

16.The point (O, 6) lies on:

(a) X-axis (b) Y-axis

(c)Origin (d) None of these

17. The smallest natural number by which 392 must be multiplied so as to get a Perfect Cube is:

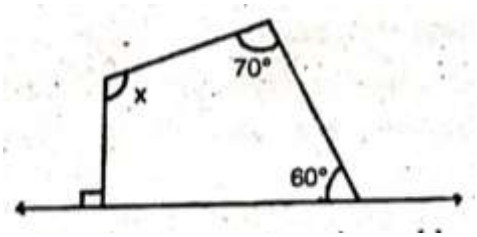
(a) 2 (b) 7

(c) 4 (d) 5

18. The diagonals of a rhombus are 64 cm and 48 cm. The height of the rhombus is: (a) 30.5 cm (b) 36.5 cm

(c) 38.4 cm (d) 58.6 cm

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



20. The sum of three consecutive odd numbers is 105. Find the numbers.

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

21. A number consisting of two digits becomes $\frac{5}{6}$ of itself, if its digits are interchanged. If the difference of the digits is find the number.

22. Solve: $\frac{3x2-8}{5x2+8} = \frac{4}{7}$

23. Find: -2/3 x 3/5+ 5/2- 3/5 x 1/6.

24. Find the value of: 8 ($x^3 - \frac{1}{x3}$) if $2x - \frac{2}{x} = 3$

25. If (x + y + z) = 9 and (xy + yz + zx) = 23, then find the value of ($x^3 + y^3 + z^3$ — 3xyz).

26. Find the area of a rhombus whose side is 6 cm and whose altitude is 4 cm.

27. Evaluate: $\frac{8^{-1} \times 5^3}{2^{-4}}$

28. An article was sold at 18000 at a discount of 10%. Find the marked price of the article and the amount of discount allowed.

29. Find k, (3/7)-5 x $(7/3)^{11}$ = (3/7)8k.

30. Divide:

($x^{3/2}$ — $xy^{1/2}$ + $x^{1/2}$ y – $y^{3/2}$) by ($x^{1/2}$ — $y^{1/2}$)

31. There are 100 students in a hostel. Food provision for them is for 20 days. How long will these Provision last, if 25 more students join the group?

32. The area of trapezium is 384 cm^2. If its parallel—ides are in the ratio 3:5 and the perpendicular distance between them is 12 cm, find the smaller of parallel sides.

33. If two adjacent angles of a parallelogram are in the ratio 5:4, find all the angles of the parallelogram.

34. Find the least number that must be added to 1300 so as to get a Perfect Square.

35. Simplify: (a + b) (c — d) + (a — b) (c + d) + 2(ac + bd).

36. Find the height of a Cylinder whose radius is 7 cm and the total Surface area is 968 cm^2 Use $\pi = \frac{22}{7}$

37. Construct a frequency distribution table for the data on weights (in kg) of 20 students of a class using the intervals 30 — 35, 30 — 35 and so on.

40, 38, 33, 48, 60, 53, 31, 46, 34, 49, 41, 55, 49, 65, 42, 44, 47, 38, 39.

38. 1400 is divided among A, B, C so that A receives half as much as B and B receives half as much as C. How much will each of them get?

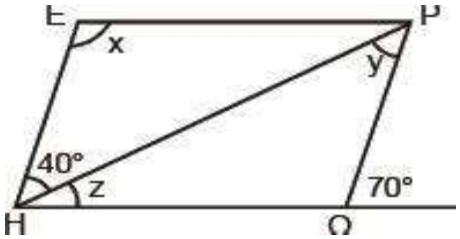
39. Examine if 117912 is a perfect cube or not. If not, find the smallest positive integer by which it must be multiplied so that the product is a perfect cube.

40. A well with 14 m inside diameter is dug 8 m deep. The Earth taken out of it has been evenly spread all around it to a width of 21 m to form an embankment. Find the height of the embankment.

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

41. Arjun is twice as old as Shriya. Five years ago his age as three times Shriya's age. Find their present ages.

42. The adjacent figure HOPE is a parallelogram. Find the angles measures x, y and z.



43. A sum of money at compound interest amounts to thrice in 3 years. In how many years will it be 9 times, itself at the same rate of interest?

44. (a) Factorise: $x^2 + 6x — 16$.

(b) If a + b = 14 and ab = 20, find the value of $a^2 + b2$.

45. A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 85 cm and length is 1 m.

46. The shape of a garden is rectangular in the middle and semi-circular ends. Total length of the garden including the semi-circular ends is 20 m and its breadth is 7m. Find the area and perimeter of the garden.

47. The denominator of a rational number is greater than its numerator by g. If the numerator is increased by 17 and the denominator is decreased by l, the number obtained is 3/2. Find the rational number.

48. During a Sale, a shop offered a discount of 10% on the marked prices of all the items. What would a customer have to pay for a pair of jeans marked at 1450 and two shirts marked at 850 each?

49. Factorise and then Simplify the expression, 12xy (9x2 — 16y2) + 4xy (3x + 4y).

50. A cow is tied to a pole fixed at one corner of a square field of grass of side 40 m by means of a rope 20 m long. Taking $\pi = 3.14$

(i) find the maximum area of the part of the field in which the cow can graze.

(ii) find the area of the remaining part of the field.

(iii) find the length of the rope, if the cow grazes 1256 m2 of the field.

PART- B SCIENCE

NOTE: Part 'B' bearing 75 Marks, contains 37 questions. Q.Nos, 1 to 15 carry one mark Q.Nos. 16 to 25 carry two marks each, Q.Nos, 26 to 35 carry three marks each, Q.Nos. 36 and 37 carry five marks each.

1. Malaria is caused by:

(a) Virus (b) Protozoa

(c) Bacteria (d) Fungi

2. The next nearest star to earth other than the Sun is:

(a) Aurora Australis (b) Aurora Barialis

(c) Alpha Centauri (d) Proxima Centauri

3. The only non-metal which is liquid in state at room temperature is:

(a) Bromine (b) Boron

(c)Iodine (d) Indium

4. A cubical wooden block has the dimension 30 cm x 20 cm x 10 cm, placed on a flat surface. In which of the following cases pressure applied is maximum? When it is placed on surface area

(a) 30 cm x 20 cm (b) 20 cm x 10 cm

(c) 30 cm x 10 cm (d) None of the above

5. What is the time taken by the moon to complete one revolution around the Sun?

(a) 29 days (b) 15 days

(c) 90 days (d) 45 days

6. Which one of the following is not a communicable disease?

(a) Cholera (b) Tuberculosis

(c) Common cold (d) Polio

7. Which is correct order of Agricultural practices?

(i) Tilling
(ii)Irrigation
(iii) Sowing
(iv) Adding manure and fertilizer
(v) Harvesting

(a) (i), (iv), (iii), (ii), (v)
(i), (iii), (iv), (ii), (v)

(ii), (i), (iv), (v), (iii)

(d) (i), (iii), (ii), (v), (iv)

8. When disease carrying microbe enters our body, the body produces

(a) Antigen (b) Antidote

(c) Antibody (d) Antioxidant

9. The gland known as 'Master gland' in our body is:

(a) Sweat gland (b) Pituitary gland

(c) Salivary gland (d) Sebaceous gland

10. If a ray of light incident on a plane mirror along the normal then the measure of the angle of incidence (in degree)

(a) 90

(b) 45

(c) 0

(d) Depends on which the ray is reflected

11. The instrument used to detect the charge in a body is

(a) Electrometer (b) Electroscope

(c) Voltmeter (d) Barometer

12. For a male child the pair of chromosomes should be

(a) XX (b) XY

(c) YX (d) YY

The waves produced by earthquake on the 4 surface of earth is known as (a) Seismic wave (b) Shock wave

(c)Mechanical wave (d) Matter wave

14. The axis of the Earth inclined to its orbital plane at an angle of
(a) 23.5 degree (b) 53.6 degree

(c) 66.5 degree (d) 90 degrees

15. If you stand between two parallel mirrors the number of image/images that you observe is/are

(a)One (b) Two

(c)Eight (d)Infinite

16. Write two suitable examples where friction is animal cell increased for our benefit

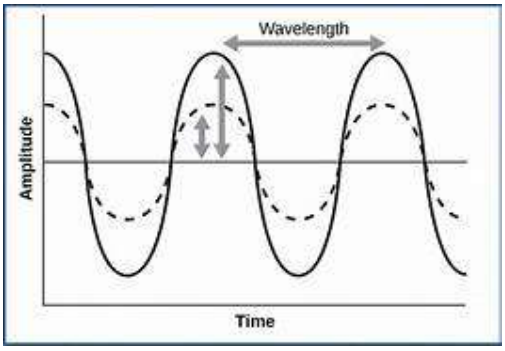
17. When a copper vessel is exposed to moist air for long it acquires a dull green coating. Why?

18. Why fossil fuels are exhaustible natural resources?
19. What are endemic and endangered species? Give one example of each?
20. A force' of 60 N is applied towards east direction. What is the magnitude and direction of the force so that:
(a) The net force is zero.
(b) The net force is 110 N towards east.

21. What are chromosomes? What are their functions?
22. What is Global warming? Why it is a major concern for us?
23. Why are the oily food stuffs such as chips and kurkures are kept in sealed packet and flushed with nitrogen?
24. Why ornaments are generally made with Gold and Silver?
25. Paper by itself catches fire easily whereas a piece of paper rapped around an aluminum pipe does not— Give reason.

26. What is acid rain? What are its consequences?

27.



(a) Which sound wave is of more pitch?
(b) Which one is more loud sound?

28. How do amoeba reproduce? Explain in brief with suitable example?
29. Write the differences- between a plant cell and animal cell?

30. Current is passed. through Copper sulphate (blue colour) solution kept in a beaker by two copper rods connected with a battery.
(a)What changes do you notice in the solution and why?
(b)On which electrode a brown deposition is seen?
(c)Mark the two electrodes and anode and cathode

31. What are Geostationary Satellites? What are their uses?

32. As a member of society what would you do to reduce air pollution?
33. What are hormones? Why adrenalin is known as stress hormone? From where Insulin and Thyroxin hormones are produced?
34. Why lightning occurs between two clouds?

35. How do we hear any sound?

36. Two beakers marked 'A' and 'B' contains aqueous solution of copper sulphate (CuS04) and Ferrous sulphate (FeS04) respectively. An Iron rod is placed in beaker A and a copper rod in beaker B. What changes do you observe after some time in the two beakers?

If there is any change explain it with proper equation.

37. Draw a diagram of human eye and label

(i) Retina (iv) Cilliary muscles

(ii) Optic nerve (v) Eye lens

(iii) Cornea (vi) Iris

(b) How our eye adjusts automatically with the varying intensity of light?

PAPER-I

PART-A: English Language

1. Read the following passage and answer the questions that follow. (3 x 5 = 15)

Rain in countryside attracts the lovers of nature, It is pleasant and helpful. But rain city creates a different kind of sight. For some people the heavy downpour may have a Chilling effect, but it has its charm with the roar of thunder and the flash of lightening. On a rainy day the lanes and the streets look like rivulets, and the •entire city becomes magically converted into Venice. The street wears a deserted look. Occasionally a man tries to plod his way. His clothes are tucked up and he holds the umbrella in one hand and his bag in the other. A sudden gush of wind tilts his umbrella and he gets drenched. If a vehicle passes speedily by splashing muddy water on him, he looks a pitiable creature. Sometimes the streets become water-logged and traffic comes to a halt.

The men who dwell in comfortable houses sit in their cosy rooms and look out of the window to catch a glimpse of some unusual sight. The howl of the wind and

the patters of the rain constitute a symphony for them and some of them feel a poetic fervour in their hearts. The poor persons however, suffer a lot. Leaky roofs, rain-soaked floors' and chocked up-drains fill them with despair. The street hawkers cannot carry on their trade. The busy house-wife wears a worry face as her oven does not burn.

Many people come out of their houses and wait for the town busy because they have the urgency of going to their work. As the town buses do not come in time they feel irritated. Sometimes they are disappointed. Boys and girls do not go to school because of rain. Life painful when it rains in torrents.

When the rain stops, the sight becomes interesting. Small children come out to the flooded streets and float paper boats. They like to splash water. Buses and cars begin moving on the streets. Life seems to begin normal activity as if a patient recovers from illness.

(a)How 'Rain is pleasant and helpful'?

(b)How does rain bring happiness to rich while misery to poor section of the society?

(c)How does rain affect the daily life of the people?

(d)How does the life normalize after the rain subsides?

Pick out the words from the given passage which mean

(i) Wet (Para l)

(ii) Live (para 2)

(iii) Comfortable (para 2)

2. Write a paragraph in about 100 words on any one of the given topics. (10)
(a) Plan a picnic for your class.

Or

(b) Harmful effects of junk and fast food.

3. You are Himanshu, a resident of Benaras Chowk, Ambikapur. Write a letter to the Chairman Municipality expressing your deep concern over the poor condition of roads and the inconvenience faced by the people of your locality.

(Maximum 150 words) (15)

4. Fill in the blanks with appropriate prepositions or adverbs given in the brackets. (2 x 5 = 10)

(a)My mother ran……. (up/out of/into) milk yesterday and I went to buy some.

(b)Could you turn……. (out/off/up) the music while I am talking?

(c)Geetanjali's car broke ……(up/off/down) on her way to office.

(d) Fazia's boss called…….. (down/out/off) the meeting till tomorrow.

(e)That problem is actually quite simple to figure …….(up/out/down).

5. Complete these sentence by choosing the correct phrases from the brackets.

[poke his nose into, white collar, once in a blue moon, got the green signal, apple of their eyes] (2 x 5 = 10)

(a)Swati's parents stopped at nothing for her wedding; clearly she is the……

(b)Nishant …….for his radical project.

(c)Why does he always have to…….. other people's affairs?

(d)Though my gardener is uneducated and poor, he is saving to send his son to a good school since he wants the boys to get a…….. job.

(e)After joining the coaching classes I….. get chance to play cricket with my friends.

6. Following sentences are INCORRECT. Find out the error and rewrite the following sentences correctly. (2 x 5 = 10)

(a) Money begets money, Don't they?

(b)He, I and you were asked to write the details.
(c)They had no manner.
(d)No other boy of the class is more taller than Ram.
(e)No sooner had he reached the station when the train left.

7. Write one word for .the following group of words. (1X5=5)

(a) One who eats human flesh?

(b) A person's first speech

(c) One who draws maps and charts?

(d) A group of angry people

(e) One who dies for country?

8. Frame a meaningful sentence by using each word. (2 x 5 = 10)

(a) Accede, Exceed

(b)Morning, Mourning

(c)Hoist, Host

(d)Temper, Tamper

(e)Differ, Defer

9. Change the following DIRECT sentences into INDIRECT.

(a)The student said to his teacher, "Do you teach my brother'??

(b)The cricketers said, "Hurrah! The ICC T20 World Cup is ours".

(c)The father said to his son, "Don't walk so fast else you may fall"

(d)The clerk said to the officer, "Why do you not accept a bribe?"

(e) He said, "Let us go out for a picnic in this lovely weather."

10. Look at the picture critically/ think of a suitable theme and write a story. (in approx. 100 words (10)

Part B: Social Studies

1. State True/false. (1 x 15 = 15)

(a) The Battle of Seringapatam was fought between East India Company and Tipu Sultan in 1799.

(b) Captain Alexander Read introduced the Ryotwari system in ,lndia.

(c)Kunwar Singh was a leader of the rebel sepoys in Lucknow at the time of •the Revolt of -1857.

(d)Dargah means the tomb of a Sufi Sainte

(e) The last Viceroy of British India was Lord Canning.

(f) Emigrants are people who arrive in a country.

(g)Information Technology Industry is known as Sunrise Industry.

(h)Cotton is also known as the 'Golden Fibre'.

(i)Viticulture means cultivation of grapes.

(j)Kalpakkam nuclear power station is in Karnataka.

(k)Resources that are found everywhere like the air we breathe, are called localised resources.

(l)Sardar Vallabhbhai patel was the first Deputy Prime Minister of India.

(m)Bhopal Gas Tragedy took place on 02 December, 1986.

(n)There are 233 electe members in the Rajya Sabha.

(o)Right to Life is a Fundamental Right Under Article 21 of the Indian Constitution

2.Fill in the blanks. (1 x 15 = 15)

(a)In 1875, the Arya Samaj Was founded by ……..in Bombay.

(b)C.V. Raman was given the Nobel Prize for his work in Physics in…..

(c)……was the British Military Officer at the time of Jallianwala Bagh Massacre.

(d)Silicon used in the computer industry is obtained from.....

(e)……..is the largest producer of bauxite in the world.

(f)Petroleum and its derivatives are called ……..as they are very valuable.

(g)Silicon Valley is located in…….

(h)Supreme Court of India was established in the year……

(i)In India, Lok Sabha is presided over by the……

(j)The ……..of India is the Supreme Law-making institution.

(k)New Delhi was constructed as a 10 square-mile city on…… Hill.

(l)Mala Irular is a tribal group of people who belong to the state of…….

(m)Gol Gumbaz, the largest dome in India is located in the state of……

(n)India's first satellite 'Arya-bhatta' was launched in……..

(o)Long Walk to Freedom' is a book written by

3.Expand the abbreviations. (1 x 10 = 10)

(a)EVM

(b)ASEAN

(c)DRDO

(d)FDI

(e)GSI

(f)NHRC

(g)IRBM

(i)ILO

(j)TELCO

4.Match the following columns. (1 x 10 = 10)

(a)Battle of Plassey	(i)1856
(b)Battle of Buxar	(ii) 1757
(c)Annexation of Awadh	(iii) 1764
(d) Annexation of Sindh	(iv) 1849
(e)Annexation of Punjab	(v) 1843
(f)Bhangi	(vi)Gujarat
(g) Pabhi	(vii) Andhra Pradesh
(h) Sikkaliar	(viii) Tamil Nadu
(i)Manash National Park	(ix) New Delhi

(j)Supreme Court of. India (x) Assam

5.Write short notes on any five of the following topics (limit 50 words) (5 x 5 = 25)

(a) Indian women in Olympic Games.

(b)Key features of Indian Constitution.

(c)Right to Education.

(d)The "Blue Rebellion"

(e) The Battle of Plassey.

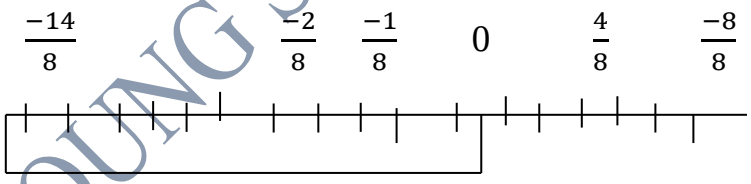
(f) Fossil Fuel.1

(g) Conservation of Water Resources.

(h)Renewable sources of Energy

EXPLANATORY ANSWERS

PART A: MATHEMATICS

1. 

2. 3/17 ÷ 8/17× 2/3 +(-2/7)×35/33÷(-7/11)
=3/17×17/8×2/3-2/7×35/33×(-11/7)
=1/4+ 10/21

$= \frac{21+40}{84} = \frac{-61}{84}$

3. Let the numbers are a and b

$a + b = 15$ ..(i)

$a^2 + b^2 = 113$

$(a+b)^2 = a^2 + b^2 + 2ab$

$= (15) = 113 + 2ab$

$= 225 = 113 + 2ab$

$= 2ab = 225 - 113 = 112$

$= ab = 112/2 = 56$

Now $(a-b) = (a+b) - 4ab$

$= 225 - 4 \times 56$

$= 225 - 224 = 1$

$a - b = 1$ ..(ii)

Solving (i) and (ii), we get

$a = 8$ and $b = 7$

numbers are 8 and 7

4. $(a+7)(a^2+3a+5)$

$= a^3 + 3a^2 + + 7a^2 + 21a + 35$

$= a^3 + 10a^2 + 26a + 35.$

5. $(x + \frac{1}{x}) = 3$

$= (x^2 + \frac{1}{x2}) = (x + \frac{1}{x})^2 - 2x. \frac{1}{x}$

$= (3)^2 - 2$

$= 9 - 2 = 7$

Hence, the value of $(x^2 + \frac{1}{x2}) = 7$.

6. $25a^2 - 4b^2 + 28bC$ — 49C2

$= 25a^2 - (4b^2 - 28bc + 498)$

$= (5a)^2 - (2b - 7c)^2$

=(5a + 2b - 7c) (5a - 2b + 7c).

7. $\frac{2p-3/4}{9p+4/7} = \frac{1}{4}$

$= \frac{8p-3/4}{63p+4/7} = \frac{1}{4}$

$= \frac{8p-3}{4} \times \frac{7}{63p+4} = \frac{1}{4}$

= 56p-21=63p+4

=56p-63p=4+21

=-7p=25

=p= -25/7

8.

	128881 9	359
65	388 325	
709	6381 6381	
718	x	

= $\sqrt{128881} = 359$.

9. 100-20 = 80

When amount pays Rs 80 then MP = Rs 100

When amount pays Rs 1600 then MP

= 100/80X1600

MP= Rs 2000

10. Here, P =Rs 12600, r= 10%, t = 2years.

A = P (1+r/100) ^{r}

=12600 (1 +10/100)^2

=12600X 11X11/10X10

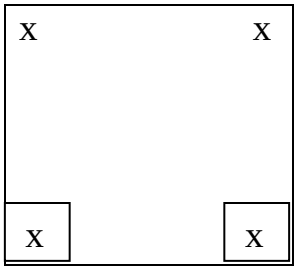
=126X121

= Rs 15246

C.I. = A-P = 15246- 12600

= Rs 2646

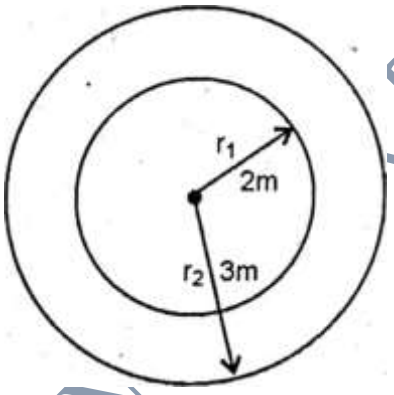
11.



ABCD is a parallelogram
A+B+C+D = 360°
x +x +x +x=360°
4x =360°
x = 360/4= 90°
Hence, the measure of each angles = 90°

12. A die has l, 2, 3, 4, 5, 6
    Even number greater than 5= 1
    Required probability = 1/6

13.



$C_1/C_2 = 2\pi r_1/2\pi r_2 = 2/3$

C1:C2= 2:3

14. 73, 85, 89, 94, 94, 100, 108, 120, 133, 140
    Here n= 10 which is even number
    Median = $\frac{n/2\ th\ term + next\ term}{2}$

=5th term + 6th term

$= \frac{94+100}{2}$ = 194/2 =97

Hence, required median = 97.

Let the numbers are 5x and 3x

15. According to the question,

5x- 3x =18

2x=18

x=9

5x = 5X9 = 45

3x= 3X9=27

Hence, numbers are 45 and 27.

16. The point (0, 6) lies on Y- axis.

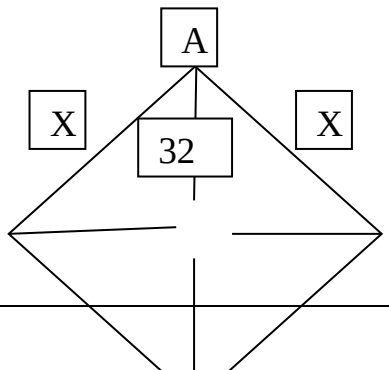
2	392
2	196
2	98
2	49
7	7
7	1

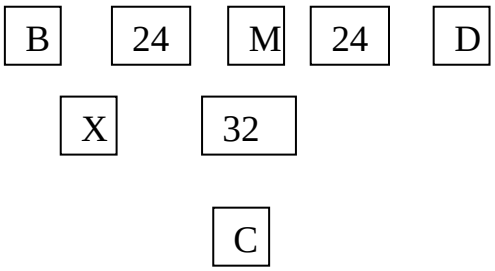
392= 2x2x2x7x7

If 392 7 multiplied by 7 then it becomes a perfect cube.

Hence, the required number = 7

17.





In triangle ABM,

$x^2 = (32)^2 + (24)^2$

$= 1024 + 576$

$x^2 = 1600$

$x = 40$

Side of rhombus = 40 cm

Area of rhombus = ½ X d_1 X d_2

=1/2 X 48 X 64

= 48X32 = 1536 cm^2

Rhombus is also a parallelogram

Area of llgm = b X h

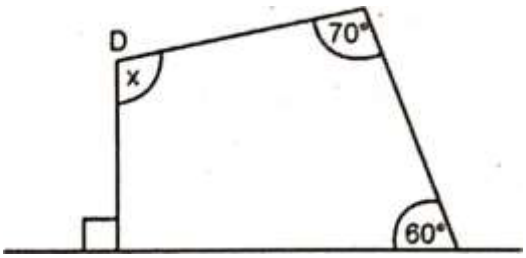
1536 = 40 X h

h = 1536/40= 384/10

= 38.4 cm.

Required height = 38.4 cm.

19.



ABCD is a quadrilateral

Angle DAB = 180 - 90 = 90° (linear pair)

A +B + C + D = 360°
$90^0 + 60^0 + 70^0 + x = 360°$

$x + 220^0 = 360$ $x = 360^0 - 220^0 = 140°$.

20. Let three consecutive odd numbers are x, x + 2 and x + 4

According to the question,

$x + x + 2 + x + 4 = 105$
$3x + 6 = 105$

$3x = 99$

$x = 33$

numbers are 33, 35 and 37.

21. Let ten's place digit number = x

and unit's place digit number = y

Therefore, number = 10x + y

According to the question,

$x - y = 1 \Rightarrow x = 1 + y$

and $10y + x = 5/6(10x + y)$

60y +6x = 50x +5y

55y=44x

5y=4x

5y= 4(1+y)

5y=4+4y

5y-4y=4 $\Rightarrow$ y=4

x=1+y =1+4=5

Number=54.

22. $\frac{3x^2-8}{5x^2+2} = \frac{4}{7}$

$21x^2$-56= 20x2 +8

x^2 =64 = x= $\pm$ 8.

23. $\frac{-2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{6}$

$= \frac{-2}{5} \times \frac{5}{2} - \frac{1}{10}$

$= \frac{-4+25-1}{10}$

$= \frac{20}{10} = 2.$

24. 8 $(x^3 - \frac{1}{x3})$

$=8x^3 - \frac{8}{x3} = (2x)^3 - \left(\frac{2}{x}\right)^3$

$= (2x - \frac{2}{x})^3 + 3(2x)\left(\frac{2}{x}\right)2x - \frac{2}{x}$

$=(3)^3 + 12(3)$ ($2x - \frac{2}{x} = 3$ is given)

=27+36=63.

25. x +y +z=9

And xy +yz +zx =23

$x^3 + y^3 + z^3 - 3xyz$

$=(x=y+z)\{(\boldsymbol{x+y+z})^{\mathbf{2}} - \mathbf{3}(\boldsymbol{xy+yz+zx})\}$

$=9\ \{(\mathbf{9})^{\mathbf{2}} - \mathbf{3}(\mathbf{23})\}$

=9(81-69) = 9X12=108.

26. Area of rhombus= base X height

=6x4=24 cm^2

27. $\frac{\mathbf{8^{-1}\times 5^3}}{\mathbf{2^{-4}}} = \frac{\mathbf{(2^3)^{-1}\times 5^3}}{\mathbf{2^{-4}}}$

$=\mathbf{2^{-3}\times 2^4}\times 5^3$

=2× 125=250.

28. 100 - 10 = 90

When SP Rs 90, then MP is Rs 100

When SP Rs 18000, then MP

= 100/90x18000= 20000

MP= Rs 20000

Discount = MP-SP

= 20000- 18000

= Rs 2000.

29. $\left(\frac{\mathbf{3}}{\mathbf{7}}\right)^{\mathbf{-5}} \times \left(\frac{\mathbf{7}}{\mathbf{3}}\right)^{\mathbf{11}} = \left(\frac{\mathbf{3}}{\mathbf{7}}\right)^{\mathbf{8k}}$

$=\left(\frac{3}{7}\right)^{-5} \times \left(\frac{3}{7}\right)^{-11} = \left(\frac{3}{7}\right)^{8k}$

$=\left(\frac{3}{7}\right)^{-16} = \left(\frac{3}{7}\right)^{8k}$

=8k=-16

=k=-2

30. $\frac{x^{3/2}-xy^{1/2}+x^{1/2}-y^{3/2}}{x^{1/2}-y^{1/2}}$

$= \frac{x^{\frac{1}{2}}(x+y)-y^{\frac{1}{2}}(x+y)}{x^{1/2}-y^{1/2}}$

$= \frac{(x+y)x^{1/2}-y^{1/2}}{x^{1/2}-y^{1/2}}$ = x+ y

31. 100+ 25= 125 students

100 students can eat food in 20 days

1 student can eat food in 20x100 days

125 students can eat food in 20x100/125

=16 days.

32. Area of trapezium = ½ x h (b1+b2)

=384 = 1/2x 12(3x +5x)

=384 = 6 ×8x

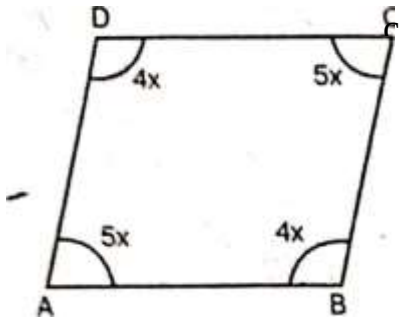
x= 384/6×8= 8

3x= 3x8= 24 cm

5x= 5x8= 40 cm

Smaller of parallel side = 24 cm.

33.



Let ABCD is a parallelogram in which

A = $5x^{o}$ and B = 4x°

C = 5x and ZD = 4x

A+ B+C + D= 360°

5x+ 4x+ 5x+4x= 360°

18x =360°=x = 360°/18 = 20°

A= 5×20= 100°

B= 4×20= 80°

C= 5×20= 100°

D= 4×20= 80°

34.

3	1300 9	36

66	400 396	
	4	

$(37)^2$= 1369

1369-1300=69

Required number= 69.

35. (a+b)(c-d)+(a-b)(c+d)+2(ac+bd)

=ac-ad+bc-bd+ac+ad-bc-bd+2ac+2bd

=2ac-2bd+2ac+2bd

=4ac

36. Total surface area of cylinder = 2πr (h + r)

= 968= 2×22/7×7(h+7)

=968=44(h+7)

=(h+7)=968/44=22

=h= 22-7=15 cm.

Hence, height of the cylinder=15cm.

37.

C.I.	Frequency
30 – 35	3
35 – 40	4
40 – 45	4
45 – 50	5
50 – 55	1
55 – 60	1
60 – 65	1
65 – 70	1
	Total = 20

38. Let C's share = Rs x

B's share= Rs x/2

A's share= ½ of B's share

= ½ ×x/2= Rs x/4

According to the question,

x/4+x/2+x= Rs 1400

x+2x+4x/4 = 1400

7x =1400×4

X= 1400×4/7

= 200X4= Rs 800

A's share =x/4= 800/4 = Rs 200

B's share = x/2= 800/2 =Rs 400

C's share = x= Rs 800

39.

2	117912	
2	58956	
2	29478	
3	14739	
17	4913	
17	289	
17	17	
	1	

Clearly the given number is not a perfect cube

2 x 2x 2 x 17 x 17x 17 x 3x (3x3)

If we multiply the given number by 9 then it will become a perfect cube.

Hence, required number=9.

40. Let height of the embankment = x m

According to the question,

$\Pi(R^2-r^2)x = \pi r^2 h$

$(28^2 - 7^2)x = 7 \times 7 \times 8$

$(28 + 7)(28 - 7)x = 7x7x8$

$35x\ 21 \times x = 7x7x8$

$x = \frac{7 \times 7 \times 8}{35 \times 21} = 8/15m$

$=0.53m$

Hence, height of the embankment = 0.53 m.

41. Let Shriya's present age = x years

Arjun's present age = 2x years

Five years ago Shriya's age = (x — 5) years

Five years ago Arjun's age = (2x — 5) years

According to the question,

$2x-5 = 3(x-5)$

$=2x-5 = 3x-15$

$=2x-5 = 3x-15$

2x-3x = -15+5

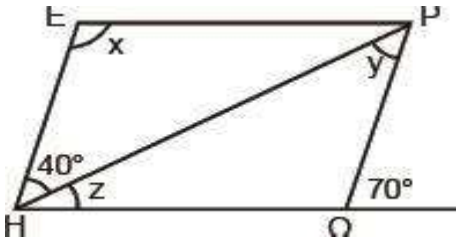
-x= -10

X=10

Hence, Shriya's present age = 10 years and

Arjun's present age = 20 years.

42.



HOPE is a parallelogram

POH = 180^0 - 70^0 = 110^0 (linear pair)

HEP = 110^0 (opp. angles of llgm)

X= 110^0

In triangle HEP,

X+40+P=180^0

110^0+ 40 +P=180^0

P= 180^0-150^0

Y+30^0= 70^0 (alternate angles are equal)

Y= 70- 30= 40^0

Z+40=70^0 (opp. angles of llgm)

Z= 70-40 = 30^0

Hence, x=110^0

y = 40^0

and z = 30^0.

43. Let P =Rs 100

Amount= Rs 300, t = 3 years

A= P $(1+r/100)^1$

$300=100(1+r/100)^3$

$300/100= 100\ (1+r/100)^3$

$3= (1+r/100)^3$

Squaring both sides

$(3)^2 =[(1 + r/100)^3]^2$

$9= (1+r/100)^6$

Time = 6 years

44. (a) $x^2 + 6x — 16$

$= x^2 + 8x — 2x — 16$

$= x(x + 8) — 2(x + 8)$

$= (x + 8)(x-2)$

(b)a + b = 14, ab = 20

$a^2 + b^2 = (a + b)^2 — 2ab$

$= (14)^2 - 2(20)$

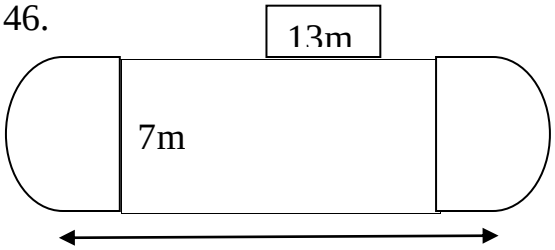
$= 196- 40 = 156$

45. Area of the road = $27\pi rh$ x 750

=2 x 22/7 x42 /100x1 x 750

=132x15 = 1980 m^2

46.



Perimeter of garden

= $2\pi r$ +2(l + b)

=2×22/7× 7/2 + 2 (13+7)

=22+40 =62 m

Area of garden

= Area of circle + Area of rectangle

=πr^2 + l x b

= 22/7 x 7/2 x 7/2 +13x 7

= 77/2 +91

= 38.5 +91 = 129.5 m^2.

47. Let numerator = x

Denominator= x+8

Fraction = x/x+8

According to the question,

X+17/x+8-1 = 3/2

X+17/x+7= 3/2

3x +21 = 2x+ 34

X=13

X +8 = 13+8= 21

Fraction= 13/21.

48. Discount = 10%

Value of total MP = 1450+ 1700

= Rs 3150

Discount = 10% of Rs 3150

= 10/100x 3150 =Rs 315

Amount payed by the customer = Rs 3150 -315

= Rs 2835

49. $12xy (9x^2 – 16 y^2) ÷ 4xy (3x+ 4y)$

$=12xy (3x +4y)(3x – 4y)/ 4xy(3x +4y)$

$=3(3x – 4y)$

$=9x – 12 y.$

50. (i) The area which can cow graze

$=1/4 \pi r^2$

$=1/4×3.14×20×20$

$=1/4 ×314/100×400 = 314 m^2$

(ii)

Area of the field = (40)2
= 40 x 40 = 1600 m^2
Area of the remaining part
= 1600 - 314 = 1286 m^2
Now area grazed by the cow = 1256 m^2

(iii) Area =1/4 πr^2

1256 = 1/4×314/100×r^2

r^2 = 1256x4x100/314

r^2 = 4x4x10x10

r= 4x10

=40 m

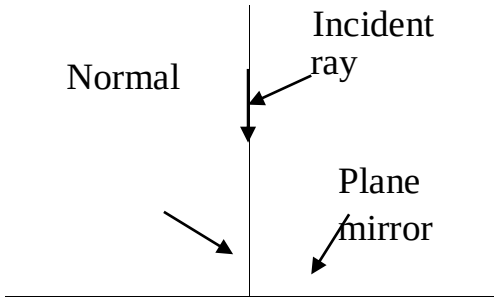
Length of the rope= 40m

PART B SCIENCE

1	2	3	4	5	6	7	8	9	10
B	D	A	A	A	A	B	C	B	C

11	12	13	14	15
B	B	A	C	D

1. Malaria is transmitted through the bite of infected female anopheles mosquito caused by the plasmodium (unicellular organism),
2. After sun, the near most star is proxima centauri at a distance 4.22 light year from the earth.
3. Bromine is the only liquid non-metallic element.
4. A body exert maximum pressure when contact area is maximum.
   Here maximum area of contact comes with 30 cm x 20 cm = 600 cm^2.
7. Correct order of agricultural practices: tilling, sowing, adding manure and fertilizer, irrigation, harvesting.
10. As. the incident ray is



16.It enables us to walk without slipping. The breakers and tiers of our cars and bicycles depend on friction to function properly.

17.When a copper vessel is exposed to moist air for long, it acquires a dull green coating. The green material is a mixture of copper hydroxide ($Cu(OH)_2$) and copper carbonate ($CuC0_3$). The following is the reaction

$2Cu+H_2O+CO_2+O_2 \longrightarrow Cu(OH)_2+ CuCO_3$

So, copper also get rusted, a greenish deposit on the surface of copper vessels is a mixture of copper hydroxide and copper carbonate.

18.Fossil fuels are formed over a million of years under high pressure and temperature. With the use of these fuels every day, the quantity of fossil fuel available in the .earth crust is slowly depleting. Since they cannot be formed artificially and quickly in any industry we have to depend on the natural process for its formation. Further the process takes million of years. With its extraction/ removal from earth crust in the same rate it is likely to get exhausted in a few hundred years. Therefore it is essential for us to exploit these natural resources carefully to minimise the wastage and conserve for the future generation.

19.An endemic species is one whose habitat is restricted to a particular area. The term could refer to an animal, a plant, a fungus, or even a microorganism. The definition differs from "indigenous", or "native", species in that the latter, although it occurs naturally in an area, is also found in other areas. Endemic species are often endangered; aid particular examples may become a focus point for campaigns to protect biodiversity in a given environment. Some have become national, or regional, emblems.

The endangered species are those living organisms which are almost on the verge of extinction. Thousands of species of plants and animals are endangered and the number increases each year.

Asian Elephant and Blue whale are two species endangers.

20.(a) 60 N → ☐ ← 60 N

Net force is zero when equal force of 10 N applied towards west direction. 13

(b). Net force is 110 N towards east so, 110 = 60 + R

R = 110 - 60
= 50 N towards east.

21. Chromosomes are thread-like structures located inside the nucleus of animal and plant cells. Each chromosome is made of protein and a single molecule of deoxyribonucleic acid (DNA). Passed from parents to offspring, DNA contains the specific instructions that make each type of living creature unique.

For an organism to grow and properly, cells must constantly produce new cells to replace old, worn-out cells. During cell division, it is essential that DNA remains intact and evenly distributed among cells. Chromosomes are a key part of the process that ensures DNA is accurately copied and distributed in the vast majority of cell-divisions. Still, mistakes do occur on rare occasions.

22. Global Warming is the increase of Earth's average surface temperature due to effect of greenhouse gases, such as carbon dioxide emissions from burning fossil fuels or from deforestation, which trap heat that would otherwise escape from Earth. This is a type of greenhouse effect.

Earth's climate is mostly influenced by the first 6 miles or so of the atmosphere which contains most of the matter making up the atmosphere. This is really a very thin layer if you think about it. In the book The End of Nature, author Bill McKibbin tells of walking three miles to from his cabin in the Adirondack's to buy food. Afterwards; he realized that on this short journey travelled a distance equal to that of of the. atmosphere where almost all of our climate is contained. In were to view Earth from space, the part of the atmosphere would only be as thick as the skin on an onion! Realizing this makes it more plausible to suppose human beings

can change the climate. A look at the amount of greenhouse gases we are spewing into the atmosphere, makes it even more plausible.

23.The most effective way to prevent oxygen damage is to remove and replace the oxygen with an inert gas. All those clear cello-packs of potato or corn chips, pretzels or popcorn that display their contents of salt and greasy calories so effectively on supermarket shelves are inflated with nitrogen gas. Punch a small hole in one and squeeze the gas inside onto a burning match. The flame will go out.

To store grain and dry goods for years, keep them in plastic bags filled with nitrogen and sealed inside plastic tubs or metal cans.

24.Gold and silver are used to make ornaments because they are lustrous, malleable, and do not corrode in water as gold also effects on our skin an make it more clear and give it extra glow, that why princess, princes, kings and mostly queens used to where more gold ornaments, so that they look more beautiful. SO, gold and silver are used to make ornaments.

This is simple,

l. silver and gold are very soft metals and can be moulded into different shapes

2. they are very pure forms of metals so there are very little impurities

3.they are not very reactive in open atmosphere, i.e., almost inert metals.

25.Because for burning or combustion, a substance must me heated to its ignition temperature. Paper wrapped around an aluminium pipe does not catch fire as on heating, it is unable to attain the ignition temperature due to transfer of heat to aluminium pipe which is good conductor of heat.

26.Acidification of rain-water is identified as one of the most serious environmental problems of transboundary nature. Acid rain is mainly a mixture of sulphuric and nitric acids depending upon the relative quantities of oxides of sulphur and nitrogen emissions.

Due to the interaction of these acids with other constituents of the atmosphere, protons are released causing increase in the soil acidity. Lowering of soil pH mobilizes and leaches away nutrient cations and increases availability of toxic heavy metals. Such changes in the soil chemical characteristics reduce the soil fertility which ultimately cause the negative impact on growth and productivity of forest trees and crop plants. Acidification of water bodies causes large scale

negative impact on aquatic organisms including fishes. Acidification has some indirect effects on human health also. Acid rain affects each and every components of ecosystem. Acid rain also damages man-made materials and structures. By reducing the emission of the precursors of acid rain and to some extent by liming, the problem of acidification of terrestrial and aquatic ecosystem has been reduced during last two .

27.(a) The higher the frequency, the higher the pitch of the sound. Hence, sound B has more pitch.

(b)Sound A is louder, because it has greater amplitude.

28.The reproduction of amoebas is called binary fission. This is when the amoeba splits itself in half, creating two new amoebas. Amoebas are single celled organisms like protists.

A sexuality (reproduction by binary fission) is often thought to be a defining characteristic of amoebae. However, analysis of 71 isolates of amoeba from the same geographical area along a river indicated that sex must be occurring in that particular lineage. Recently, Lahr et al. proposed that the majority of amoeboid lineages are, contrary to popular belief, at least anciently sexual, and that most current asexual groups have arisen recently and independently. In addition, recent evidence also indicates that several other single-celled eukaryotes those were previously regarded as asexual are, or were in the past, capable of sexual reproduction. These findings have led to the idea that sex was present in the earliest common ancestor of all eukaryotes.

REPRODUCTION IN AMOEBA

Parent cell Nucleus dividing

Cytoplasm divides Two daughter cells

29.

	Animal Cell	Plant Cell

Cell wall	Absent	Present (formed of cellulose)
Shape	Round (Irregular shape)	Rectangular (fixed shape)
Vacuole	One or more small vacuoles (much smaller than plant cells).	One, large central vacuole taking up 90% of cell volume.
Centrioles	Present in all animal cells Animal cells don't have chloroplasts	Only present in lower plant forms.
Chloroplast	Present	Plant cells have chloroplasts because they make their own food
Cytoplasm		Present
Endoplasmic Reticulum (Smooth and Rough)	Present	Present
Ribosomes	Present	Present

Mitochondria	Present	Present
Plastids	Absent	Present
Golgi Apparatus	Present	Present
Plasma Membrane	Only cell membrane	Cell wall and a cell membrane
Microtubules/ Microfilaments	Present	Present
Flagella	May be found in some cells	May be found in some cells
Lysosomes	Lysosomes occur in cytoplasm	Lysosomes usually not evident
Nucleus	Present	Present
Cilia	Present	It is very rare

30. Electrolysis of CuS04 Using Active Electrodes (e.g .copper)

Ions present: $cu^{2}+$, H+, OH- and $SO^{2}-$

Reaction at Anode

- Both $S04^{2}-$ and OH- gets attracted here but not discharged. Instead, the copperanode discharged by losing electrons to form $Cu^{2}+$. So, the electrode size decreases.
- Cu (s) $\rightarrow$ Cu^{2+} (aq) $+2e^{-}$

Reaction at Cathode

- $Cu^{2}+$ produced from anode gains electrons at cathode to become Cu atoms becoming copper. Hence, the copper is deposited here applications and the electrode grows.
- Cu^{2+} (aq) $+2e^{-} \rightarrow$Cu (s)

Overall Change

- There is no change in solution contents as every lost of $Cu^{2}+$ ions at cathode is replaced by Cu $^{2}+$ ions released by dissolving anode.
- Only the cathode increases size by gaining copper and anode decreases size by losing copper.
- We can use this method to create pure copper on cathode by using pure copper on cathode and impure copper on anode.
- Impurities of anode fall under it.

31. A geostationary satellite is an earth-orbiting placed at an altitude of approximately 35,800 kilometers (22,300 miles) directly over the equator, that revolves in the same direction the earth rotates (west to east). At this altitude, one orbit takes 24 hours, the same length of the time as the earth requires rotating once on its axis. The term geostationary comes from the fact that such a satellite appears

stationary in the sky as seen by ground based observer. BGAN the new global mobile communication network uses geostationary satellites.

These satellites have revolutionized global communications, travel broadcasting and weather forecasting and have a number of important defense and intelligence applications.

32. Air pollution, including that of ozone is mainly the result of human activities. The small things you do everyday can help in reducing air pollution and hence improve the protection of the environment as well as human health.

Here are some tips, on what you can do on a day to day basis, to help prevent air pollution.

Take public transport or carpool

A good solution for longer journeys may be public transport or carpooling, since more people can be transported in the single vehicle. If you choose to take the car rather than, train or bus, for instance, you will generate several times more ozone pollution and up to 30 times more C02 emissions.

Walk or use the bike!

45% of the ozone precursors and 38% of the particulate matter emitted in Europe comes from transport. On average, one out of three journeys we do by car is only to go as far as 2 km. Replacing a car ride by walking or using the bicycle not only helps reduce traffic but also emissions.

Go for local produce!

Transporting goods from one side of the world to the other generates a lot more air pollution than transporting them short distances. Try to buy locally produced goods and eat local foods that are in season: transporting and producing them doesn't generate as much air pollution.

Save electricity!

Don't leave your electronic devices—TV sets, computers, DVD's—on stand-by mode. Switch them off completely and you will save about 10% of your electricity bill. Buy energy-saving light bulbs and "A"-labelled household

appliances. Less electricity consumed means less power produced and fewer pollutants into the air from burning of fossil fuels.

33. Hormones is a regulatory substance produced in an organism and transported in tissue fluids such as blood or sap to stimulate specific cells or tissues into action.

Adrenalin is often referred to as 'emergency hormones' because they are released when a person feels excited. Thus it is this hormone that often gives people the strength to do otherwise—impossible deeds and prevent emergencies.

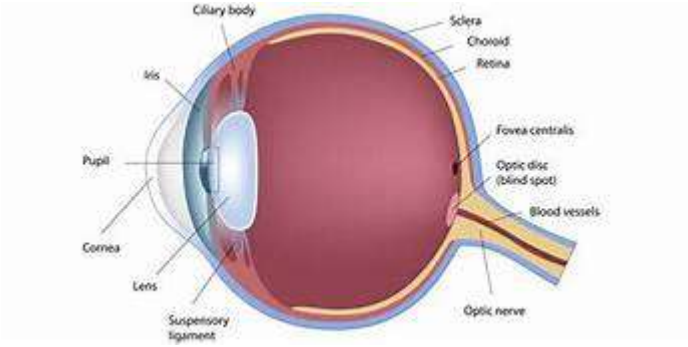
34. Lighting occurs due to an accumulation of charge, electrons if you like, in the air. As a storm grows, electrical charges build up in the clouds. At the same time, oppositely charged particles are growing in number on the earth's surface. As you know opposite charges attract and due totthe large number of charges this attraction grows quickly. At some point the attraction becomes large enough to overcome air's resistance to electrical flow, in this case the flow of charges between the ground and the clouds. These particles move toward each other at incredible speeds and when they meet they complete an electrical circuit. Charge from the ground then surges upward at nearly or third the speed of light and we see a bright flash of lightning.

35.Sound is created when an object vibrates, This causes the air around it to vibrate. These vibrations in the air, known as sound waves are collected by the outer ear, travel down the ear canal and strike the eardrum. From here they pass to the small bones of the middle ear, which transmit them to the auditory nerve in the inner ear. The auditory nerve connects directly to the brain. At this age, children need to know simply that sound travels through the air and we hear it when it reaches our ears.

36. For Beaker A Fe + cuS04 -+ FeS04 + cu

For Beaker B
2Al + 3 FeS04 A12 (S04)3 + 3Fe

37.



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EXPLANATORY ANSWERS

PART A: ENGLISH LANGUAGE

1. (a) The rain is pleasant and helpful as it brings the Chilling effect and attracts lovers of nature to the countryside. It also helps crops and often vegetation grow. The environment becomes cool and greener.

(b) The rich sit in their cosy homes and enjoy the rain time looking out of the windows while the poor suffer with their leaky roofs, rain-soaked floors and choked updrains. They are unable to move out to earn and find it difficult to burn their ovens to cook food.

(c) The daily life of people is greatly affected by rain as Streets and roads are waterlogged and slippery. There are traffic-jams and problems in commuting.. It is difficult to keep clothes dry and reach to work places in time. Hawkers are out lesser, hence, scarcity of things is also imminent.

(d)Life normalizes slowly after the rain subsides. Children come out to float paper boat and splash water. Traffic starts moving gradually. In all normalizes in the manner a patient recovers from illness.

(e) (i)Drenched
(ii)Dwell
(iii)Cosy

2.(b) Harmful effects of junk and fast food .Every living being has to eat to continue living. We should eat only fresh, well-washed and well-cooked food articles which are free from dust and flies. Fried foods and foods containing excess of fat, spices and chillis are harmful. Roadside eating should be avoided. Therefore, it is of paramount importance to eat good and useful things and eat them at the proper time and in the best way. It is essential that we take a balanced diet. We must take our meals at the fixed hours. We must take our food in the right quantity. Under-eating can cause us weakness and chronic under-eating can lead to undernourishment and cause tuberculosis, asthma or other diseases by reducing our immunity. It should be seen particularly in children that they eat the required quantity of food, since because of excessive exertion, they lose many of their calories. Also for growing purposes and brain and nerve development, they need extra protein and fats. We should not over-eat. Chronic over-eating can cause several diseases like those of stomach, heart of liver. We should take our food along with other members of the family at the table. We

should take the last meal two or three hours before going to bed. There should be a good time gap between two meals, so that the food gets digested in our stomach.

3.

Benaras Chowk,
Ambikapur,
Dated……

The Chairman, Municipal Corporation, Ambikapur.

Respected Sir,

The road connecting our colony with the main road has been in a pathetic condition for the past six months. The surface has been broken at several places. It is full of pot-holes which are deep enough to trap the wheels of light vehicles. The road is almost impassable now.

Driving on this road would mean breaking one's bones. It is highly dangerous during the rainy season, when the water covers the road, it is impossible to see the pot-holes. A driver who drives on it unawares will certainly wreck his body and vehicle by falling into these holes. Several accidents on this road due to its bad condition.

Hired vehicles' drivers refuse to come to our colony through this road. They fear damage to their vehicles. Therefore, most of the time we have to walk I km. to reach our colony.

We have made several complaints earlier to get this road repaired but no action has been taken on our request so far. You are requested to look into the matter personally and take an early action.

Yours truly
Himanshu

4. (a) out of (b) off

(c) down (d) off

(e) out

5. (a) apple of their eyes

(b) got the green signal

(c) poke his nose into

(d) white collar

(e) once in a blue moon

6. (a) Money begets money. Doesn't it?

(b) I, you and he were asked to write the details.

(c)They have no manners.

(d)No sooner did he reach the station then the train left.

Cannibal (b) Maiden

(c) Cartographer (d) Mob

(e)Martyr

8. (a) Accede: The teacher acceded to the student's request.

Exceed: His expenditure income.

(b) Morning: He gets up early in the morning.

Mourning: The nation was mourning the death of the leader,

(c) Hoist: National flag was hoisted on the building.

Host: He hosted a grand party.

(d) Temper: He has a hot temper.

Tamper: Do not tamper with the seal of meter.

(e) Differ: I differ with your opinion.

Defer: The meeting was deferred.

9.(a) The student asked his teacher whether he taught his brother.

(b) The cricketers exclaimed with joy that the ICC T20 World Cup was their.

(c) The father advised his son not to walk that fast else he might fall.

(d) The clerk asked the officer why he did not accept a bribe.

(e) He proposed to go out for a picnic in that lovely weather.

10.Environmental Pollution

The earth is a wonderful planet. But, unfortunately, man is making a criminal misuse of it by polluting it through his wanton activities. At present, the eurth has become a highly polluted planet. There is most deleterious pollution in the air, in water, in the soil and even in space. Many big cities like Delhi and Kolkata in India and Karachi in Pakistan are no longer worth-living. One feels suffocated in these cities. The petrol and diesel fumes from automobiles and smoke from the chimneys of mills and chemical plants spread highly toxic gases in the air. The thoughtless felling down of trees and forest wealth is depleting the ratio of oxygen in the air. The use of refrigerators and air conditioners is leading to the thinning of ozone layer in the atmosphere. The rivers are getting stuffed with toxic effluents from the factories. The excessive use of pesticides and insecticides is also playing havoc with the soil and underground water. The toxic elements from factories reach the sea through streams and destroy the fishes and sea plants. The innumerable space ships revolving in space spread dangerous debris there which ultimately falls on the earth. There is also the highly pernicious noise pollution as a result of high pitch of T. V. sets, radios, jugging automobiles, horns, buzzers, mikes, etc. It harms sensitive human nerves. Let; us take care to make our earth pollution free.

PART-B : Social Studies

1. (a)False (b) False
(c) False (d) True
(e) False (f) False
(g) True (h)True
(i) True (j) False
(k) False (l)True
(m) False (n)True
(o) True

2. (a) Dayanand Saraswati
(b) 1930
(c) General O' dyer
(d) Sand
(e) Australia
(f) Medicinal material
(g) USA
(h) 1950
(i) Speaker

(j)Parliament

(k)Raisina

(l) Tamil Nadu

(m) Karnataka

(n) 1975

(o) Nelson Mandela

3. (a) Public Interest Litigation

(b) Electronic Voting machine

(c) Association of south East Asian nations

(d) Defense research and development organization

(e) Foreign direct investment

(f) Geological survey of India

(g) National human rights commission

(h) Intermediate Range Ballistic missile

(i) International labor organization

(j) Tata engineering and locomotive company

4. (a) (ii) (b) (iii) (c) (i)

(d) (v) (e) (iv) (f) (vii)

(g) (vi) (h) (viii) (i) (x)

(j)(ix)

5. (b) Key features of Indian Constitution

- It is the longest written constitution in the world consisting of 26 chapters, over 450 articles and 12 schedules.
- Proclaims India a Sovereign Democratic Republic.
- Fundamental Rights are guaranteed to all citizens of India.
- Directive Principles of State policy have been incorporated into the constitution.
- It established the parliamentary system of government(the president of India is the constitutional head, the council of ministers or the union cabinet is the real executive and is responsible to the Lok sabha.
- It is federal in form (in normal times) but unitary in spirit (during emergencies)
- It is neither too rigid (some provisions can be amended by a simple majority) nor too (some provisions require special majority for amendment)
- It declares India to be a secular state.
- It guarantees single citizenship to all citizens.
- It guarantees adult franchise (every adult above 18 years have the right to vote; before 1989 the age limit was 21 years) and the system of joint electorates.
- It provides for an independent judiciary; the Supreme Court acts as a guardian of the Constitution.

(c) Right to Education

Article 21 A declares that the State shall provide free and compulsory education to all children of the age of six to fourteen years in such a manner as the State may determine. Thus, this provision makes only elementary education a Fundamental Right and not higher or professional education.

This provision was added by the 86th the country's aim to achieve 'Education for All'. The government described this step as 'the dawn of the second revolution in the chapter of citizens' rights'. Even before this amendment, the Constitution contained a provision for free and compulsory education for children under Article 45 in Part IV.

However, being a directive principle, it was not enforceable by the courts. Now, there is scope for judicial intervention in this regard.

This amendment changed the subject matter of Article 45 in directive principles. It now reads—'The state shall endeavour to provide early childhood care and education for all children until they complete the age of six years.' It also added a new fundamental duty under Article 51A that reads—'It shall be the duty of every citizen of India to provide opportunities for education to his child or ward between the age of six and fourteen years'. In 1993 itself, the Supreme Court recognised a Fundamental Right to primary education in the right to life under Article 21. It held that every child or citizen of this country has a right to free education until he completes the age of 14 years. Thereafter, his right to education is subject to the limits of economic capacity and development of the state. In this judgement, the Court overruled its earlier judgement (1992) which declared that there was a fundamental education up to any level including professional education like medicine and engineering.

(e)The Battle of Piassey

- The Mughal farman was misinterpreted by the British, and they misused the dastaks or free passes.
- The British fortified Calcutta against the Nawab's orders.
- Siraj-ud-daula was young and energetic; however, being inexperienced and hasty he lost the battle.
- The battle paved the way for the British mastery of Bengal.
- The victory boosted the prestige of the British and made them a major contender for the Indian empire.
- It enabled the Company and its servants to amass untold wealth.
- This marked the beginning of the 'drain of wealth' from India to Britain.

(f) Fossil Fuel

Fossil fuels are hydrocarbons, primarily coal, fuel oil or natural gas, formed from the remains of dead plants and animals. The utilization of fossil fuels has enabled large-scale industrial development and largely supplanted water-driven mills, as well as the combustion of wood or peat for heat.

Fossil fuel is a general term for buried combustible geologic deposits of organic materials, formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the earth's crust over hundreds of millions of years.

The burning of fossil fuels by humans is the largest source of emissions of carbon dioxide, which is one of the greenhouse gases that allows radiative forcing and contributes to global warming.

(h) Renewable Sources of Energy

Renewable energy is energy generated from natural resources—such as sunlight—which are renewable (naturally replenished). Renewable energy technologies include:

- Biofuels
- Biomass
- Geothermal
- Hydro power
- Solar power
- Tidal power
- Wave power
- Wind power