Summative Assessment - II Class VIII

SAMPLE CBSE QUESTION PAPER-2012

Note : This booklet contains mathematics Important formulae on next page.

IMPORTANT FORMULAE

Triangle

1) Area of a triangle = $\frac{1}{2}$ x Base x Height
2) Area of a triangle = $\sqrt{s(s-a)(s-b)(s-c)}$ where s = $\frac{s=a+b+c}{2}$ and a, b, c are the sides of the triangle
3) Area of equilateral triangle = $\sqrt{\frac{3}{4}}$ $(side)^2$

Quadrilateral

1) Area of a rectangle = Length x Breadth
2) Area of a square = $(side)^2$
3) Area of a rhombus = $\frac{1}{2}$ (Product of diagonals)
4) Area of a quadrilateral = $\frac{1}{2}$ diagonal (sum of its Sides)
5) Area of a trapezium = $\frac{1}{2}$ (sum of its parallel sides) x Height

Circle

1) Circumference of a circle = 2π (radius)
2) Area of a circle = π $(radius)^2$
3) Area of a sector = $\pi \frac{\theta}{360^\circ}$ x $(radius)^2$ where θ is the angle of the sector
4) Area of a ring = $\pi (R^2 - r^2)$, where R and r are external and internal radii.

Cuboid : Let l, b and h be its length, breadth and height respectively.

1) Volume = l x b x h
2) Surface area of the cuboid = 2(lb+bh+hl)
3) Diagonal of the cuboid = $\sqrt{l^2 + b^2 + h^2}$

Cube

1) Volume of the cube = a^3 where a is the edge
2) Surface area of the cube = $6a^2$
3) Diagonal of the cube = $\sqrt{3}\,a$

Right Circular Cylinder : Let r and h be the radius of the base and height of the cylinder respectively.

1) Volume - $\pi r^2 h$
2) Curved surface area = $2\pi r h$
3) Whole surface area = $2\pi r\ (h + r)$

Right Circular Cone : Let r be the radius of the base, h the height and l the slant height of the cone.

1) $l = \sqrt{h^2 + r^2}$
2) Volume = $\frac{1}{3} \pi r^2 h$
3) Curved surface = $\pi r l = \pi r \sqrt{h^2 + r^2}$
4) Whole surface = $\pi r (l + r)$

Sphere and Hemisphere

1) Volume = $\frac{4}{3} \pi r^3$ where r is the radius of the sphere
2) Surface area = $4\pi r^2$
3) Curved surface area of hemisphere = $2\pi r^2$
4) Whole surface area of hemisphere = $3\pi r^2$

Algebra

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

3) $(a - b)^2 = a^2 - 2ab + b^2$
4) $(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$
5) $(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$
6) $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$
7) $a^3 + b^3 = (a + b)(a^2 - ab + b^2)$
8) $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + y^2 - xy - yz - zx =$
$\frac{1}{2}(x + y + z)[(x - y)^2 + (y - z)^2 + (z - x)^2]$
9) $a^3 - b^3 + c^3 + 3abc = (a - b + c)(a^2 + b^2 + c^2 + ab + bc - ca)$

Comparing Quantities :

i. Profit = S.P. – C.P.
ii. Loss = C.P. – S.P.
iii. Profit % = (Profit / C.P.) x 100
iv. Loss % = (Loss / C.P.) x 100
v. C.P. = S.P. / (1+P%)
vi. S.P. = C.P. – (Loss% x C.P.)
vii. Amount = Principal + Interest1
viii. S.I. = (P x R x T)/100, P = Principal, R = Rate, T = Time, S.I. = Simple intrest for yearly
ix. $A = P(1 + R/100)^n$ A = Amount, R = Rate, n = Numbers of years
x. Discount = Marked Price – Sale Price.
xi. Discount % = (Discount / Marked Price) x 100
xii. $A = P(1 + R/200)^{2n}$ A = Amount, R = Rate, n = Number of years, for half yearly.

Mensuration :

1. Perimeter of a regular Polygon = Number of sides x length of one side.
2. Area of Parallelogram = base x height
3. Area of trapezium = half of the sum of the length of parallel sides x perpendicular distance between them.
4. Area of rhombus – half the product of its diagonal
5. Volume of cube = $(l)^3$
6. 1 cm^3 = 1ml
7. 1 L = 1000 cm^3
8. 1 m^3 = 1000000 cm^3
9. $a^o = 1$

MATHEMATICS

Max Marks- 90 **Time -3 hours.**

General Instructions:

1. *The question paper consists of 41 questions divided into four sections A,B,C and D. Section A consists of 12 questions of 1 mark each, which are multiple choice type questions. Section B consists 14 questions of 2 marks each. Sections C consists 10 questions of 3 marks each. Section D consists of 5 questions of 4 marks each.*
2. *There is no overall choice in the paper. However, internal choice is provided in one question of 2 marks, 3 questions of 3 marks and two questions of 4 marks.*

Section – A

1. If $(2^{3x-1}+10)\div 7=6$,then x is equal to

   (a) – 2 (b) 0 (c) 1 (d) 2
2. If the 4 - digit number X27Y is exactly divisible by 9, then the least value of (X + Y) is

   (a) 0 (b) 3 (c) 6 (d) 9
3. If x = 10, then the value of $(4x^2+20x+25)$ = ?

   (a) 246 (b) 425 (c) 625 (d) 575
4. $6a^2$ 13a + 6 = ?

   (a) (2a + 3) (3a - 2) (b) (2z + 1) (3 - 2z) (c) (3a - 2) (2a - 3)
5. A period of 4 hour 30 min is what per cent of the day?

   (a) 18 ¾% (b) 20% (c) 16 ⅔% (d) 19%
6. The selling price of an article is 6/5 of the cost price. The gain percentage is

   (a) 90% (b) 25% (c) 20% (d) 120%
7. The sum that amounts to the same ₹ 4913 in 3 years at 6¼% per annum compounded annually is

   (a) ₹ 3096 (b) ₹ 4076 (c) ₹ 4085 (d) ₹ 4096
8. 6 Pipes fill a tank in 120 minutes, then 5 pipes will fill it in

   (a) 100min (b) 144min (c) 140min (d) 108min
9. The sum of all interior angles of a hexagonal is

(a) 6 right Ls (b) 8 right Ls (c) a right Ls (d) 12 right Ls

10. The diagonals do not necessarily intersect at the right angle in a

(a) Parallelogram (b) rectangle (c) rhombus (d) kite

11. The diagonals of cube is $9\sqrt{3}$ cm long. Its total surface area is

(a) $243cm^2$ (b) $486cm^2$ (c) $24cm^2$ (d) $648cm^2$

12. The abscissa of a point is its distance from the

(a) Origin (b) x-axis (c) y-axis (d) none of these

Section-B

13. Find the ratio of 8m to 16km
14. Find the sum : $4x^2 + 3y^2 + 4xy$, $5x^2 + 8y^2 + 12xy$.
15. Find the number of vertices and edges in the adjoining parallelogram

16. If 20 men can reap a field in 8 days than 16 men will reap the same field in how many days?
17. Divide : (a) $13xy^3z^2 \div 13xyz$
18. solve the cryptarithms : PQ X P3 = 57Q, AB X A7 = 67B
19. Express each of the following as fraction : (a) 4% (b) 56%

OR

Find C.P if S.P = ₹ 600 and profit = 20%

20. If 75% of a number added to 75, then result is the number itself. Find the number.
21. Simplify : (a) $5^8 \div 5^5$ (b) $(3^5 x 3^4) \div 3^{13}$
22. The cost price of 10 pens is equal to the selling price of 9 pens. Find the profit or loss percent.
23. Volume of a cube is 216 cm^3. Find its surface area.
24. Side of a cube is 10m. Find its surface area.
25. Find the area of a square the length of whose diagonal is $3\sqrt{2}$ meters.
26. Verify that sum of 29 and the number obtained by revising the digits is multiple of 11.

Section – C

27. Which of the following number is divisible by 66?

    (a) 5265 (b) 5424 (c) 4752

28. which multiple of 9 is closest to 1,00,000?

    OR

    Divide : (a) $15m^2n^2$ by $5m^2n^2$ (b) $x^2 - y^2$ by $x + y$

29. Subtract : $4x – 12xy + 8y – 3$ from $8x - 20xy + 10y + 4$.

30. Find the marked price when (i) S.P = ₹ 1920 and discount = 4%

31. Find the area of the rectangle with length $5x^2y$ and breath $4xy^2$

    OR

    Find the Product :

    i) $4x^2 \times 3y^3$ ii) $–2x^2y \times 5x$ iii) $–16xy^2 \times 4xy$

32. The length of a side and a diagonal of a rhombus are 5cm and 8 cm respectively, find the area of rhombus

33. Find the value of x if (i) $3^{x+1} = 9$ (ii) $5^{2x+1} = 5^3$

    OR

    SIMPLIFY : (a) $\{(3^2)^4\}^6$ (b) $\{4(-5)^{-4} \times 7^5\}^3$

34. Given that the number $\overline{77713A8}$ is divisible by 4, where A is a digit, what are the possible values of A?

35. Find the length of altitude of an equilateral triangle of side 24 cm.

36. Factorize : $4x^2 + 9y^2 – 25z^2 + 12xy$.

Section - D

37. Find the area of a trapezium if its parallel sides are 1m and 1.2m and perpendicular distance between them is 0.08m.

38. Using division state whether

    i) $x + 6$ is a Factor of $x^2–x– 42$ ii) $4z–3$ is a factor of $4z^2–13z–12$

    OR

    Find the volume of a cylinder of height 40 cm and having radius of the base 3.5 cm.

39. Find the amount on ₹ 2,400 after 3 years when the interest is compounded annually at the rate of 20% per annum.

OR

Simplify and evaluate for x = 2, (x (x–3)) + 2(x+1) + 5.

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

41. Factorize by the method of completing a square : $x^2 + 10x + 16$.

SCIENCE

Max Marks – 90 **Time – 3 hours.**

General Instructions :-
All Questions are Compulsory
Do not write questions on answer sheet.
Draw diagram wherever asked.

Pattern of Questions
One mark questions : Q. 1 to 35

Q. I	Multiple choice questions	(1 x 20 = 20)
Q. II	Scientific terms	(1 x 5 = 5)
Q. III	True of False	(1 x 5 = 5)
Q. IV	One word answers	(1 x 5 = 5)
Q. V	2 Marks questions	(2 x 10 = 20)
Q. VI	3 Marks questions	(3 x 5 = 15)
Q. VII	5 Marks questions.	(5 x 4 = 20)

Q. I Multiple choice questions.

1. The unit of frequency is
   (Decibel, Hertz, Metre, Pascal)
2. To move a loaded trolley we have to _____ it.
   (Push, Pull, attract, repel)
3. The first menstrual flow begins at puberty is termed as
   (Menopause, Maturation, menarche, metamorphosis)
4. The force applied by an archer to stretch the bow is an example of
   (electrostatic force, frictional force, muscular force, gravitational force)
5. Pressure is equal to
   (Force/Area, Area/Force, Force x area, speed/area)
6. Sliding friction is _____ than static friction.
   (More, less, 2times, 4times)
7. The Kyoto protocol has been signed to minimize
   (Acid rain, CFCs, green house effect, ozone depletion)
8. Metamorphosis in frog is controlled by
   (Thyroxin, Testosterone, estrogen, adrenalin)
9. Sprinkling of powder on a carom board _____ friction
   (reduce, produce, increase, no effect)

10. Sound can travel through
    (gas only, liquid only, solid only, solids liquids and gas)
11. The passage of electric current through a solution causes _____ effect. (magentic, chemical, heating, all of these)
12. While making a circuit the longer lead of an LED is always connected to _____ of a battery
    (Positive terminal, Negative terminal, Any of these, Both of these)
13. The voice of which of the following is likely to have minimum frequency.
    (Baby boy, Baby girl, A woman, A man)
14. What happens when two balloons rubbed with woollen clothes are brought together?
    (They attract each other, They repel each other, They burst off. No change)
15. Designers of wall papers and fabrics and artists use _____ to get ideas about new pattern
    (Periscope, telescope, Kaleidoscope, microscope)
16. Nerve cells in the retina sensitive to dim light are called (Cones, cornea, iris, rodes)
17. The device used to test the presence and nature of electric charges on a body is called
    (Electrometer, Electroscope, LED, stethoscope)
18. _____ help scientists in investigating the nature of materials from which solar system was formed.
    (meteors, meteorites, comets, asteroids)
19. Which city has the most polluted stretches of river Ganga
    (Allahabad, Varanasi, Kanpur, Patna)
20. _____ are responsible for ozone hole.
    (Chlorofluro carbons, Oxides of sulphur and nitrogen, global warming, Acid rain)

Q. II Give scientific terms for the following

21. The pressure exerted by air around us
22. Splitting of sunlight into its component colours

23. Frictional force exerted by fluids
24. The sound producing organ in human body
25. Transfer of electric charges from a charged object to earth.

Q. III Write True / False :-

26. A comet appears generally as a bright head with a long tail.
27. The audiable range of human ear is between 20Hz to 2000 Hz.
28. Saturn is the biggest planet of solar system.
29. We should not use more chlorine tablets than specified
30. Drugs are addictive substances.

Q. IV Answer in one word / one sentence

31. What is the similarity in the shape of the following
    A fish, a bird, an aeroplane, a ship.
32. How many images of a candle are formed if it is placed between 2 parallel mirrors separated by 40 cm?
33. What is the relation between frequency and time period?
34. Name the casual organism of AIDS
35. Name 2 water born diseases II

Q. V 2 Mark each.

36. What is the use of a lightning conductor?
37. What are the harmful effects of noise pollution?
38. State the laws of reflection.
39. Write 2 methods to make water potable.
40. What are the specialties of moon's surface?
41. What steps have been taken by Delhi Government to check pollution by vehicles?
42. Show the relative positions of stars (i) cassiopeia (ii) Lea Major.
43. Give two similarities between a human eye and a camera
44. When is Lightning seen?
45. Why should you not touch electrical appliances with wet water?

Q. VI 3 mark each.

46. Name the hormones produced by the following endocrine glands. Write their function.
    Pituitary, Pancreas, Adrenal
47. Friction is a necessary evil. Comment.
48. What are effects of force. Write one example for each.
49. Write an activity to show that sound needs a medium to travel **OR**
    Write an activity to show that liquid exerts equal pressure at same depth.
50. How will you help a visually challenged person to read or write.

Q. VII 5 mark each.

51. What is electroplating? Draw a simple circuit showing electroplating. Write 2 commercial use of this process.
52. Draw a labeled diagram of Human eye. Explain how can you take care of your eyes (2points).
53. List the changes in our body that takes place at puberty. (any five)
54. How does lightning occur? Suggest three measures to protect ourselves from lightning. **OR**
    What causes an earth quake? How will you take protection against yourself if you are living in a fault zone?

LOCATION MAP