



DELHI PUBLIC SCHOOL

SAIL TOWNSHIP, RANCHI
ANNUAL EXAMINATION (2017-18)

Class: VIII
Time:- 2½ Hrs.

Subject:- Mathematics
F.M. – 80

General Instructions:

1. All questions are compulsory.
2. The question paper consists of 28 questions divided into four sections A, B, C and D. Section A comprises of 4 questions of 1 mark each, Section B comprises of 6 questions of 2 marks each, section C contains 8 questions of 3 marks each and section D contains 10 questions of 4marks each.
3. Handwriting should be neat and clean.

SECTION - A

1. Simplify : $(6^{-1} - 8^{-1})^{-1} + (2^{-1} + 3^{-1})^{-1}$
2. Draw a net pattern for a octahedron.
3. Factorize: $x^2 + xy + 8x + 8y$
4. Simplify: $(7m - 8n)^2 + (7m + 8n)^2$

SECTION-B

5. If $64^{2x-5} = 4 \times 8^{x-5}$, then find the value of x .
6. A rectangular reservoir contains 42000 litres of water. Find the depth of water in the reservoir if its base measures 6m by 3.5m.
7. Is a square prism same as cube? Explain.
8. If the weight of 12 sheets of thick paper is 40 grams, how many sheets of same paper would weigh $2\frac{1}{2}$ kilograms?
9. 6 pipes are required to fill a tank in 1hour 20 minutes. How long will it take if only 5 pipes of the same type are used?
10. Factorize the expression and divide them as directed: $12xy(9x^2 + 24xy + 16y^2) \div 4xy(3x + 4y)$

SECTION - C

11. Abhik has three boxes of different fruits. Box A weighs 2.5 kg more than Box B and Box C weighs 10.25kg more than Box B. The total weight of these boxes is 48.75kgs. How many kg does Box A weigh?
12. Solve the following linear equation:
$$\frac{7x-1}{4} - \frac{1}{3} \left(2x - \frac{1-x}{2} \right) = \frac{10}{3}$$
13. Draw and verify Euler's formula for each of the following figures.
 - (i) Hexagonal pyramid
 - (ii) Tetrahedron
14. The ratio between the C.S.A. and the T. S.A. of a right circular cylinder is 1 : 2. Find the ratio between the height and radius of the cylinder.

15. Find the continued product: $(x - \frac{1}{x}) (x + \frac{1}{x}) (x^2 + \frac{1}{x^2}) (x^4 + \frac{1}{x^4})$

OR

If $(x + \frac{1}{x}) = 12$, find the value of $(x - \frac{1}{x})$

16. Find the compound interest on Rs.12600 for 2 years at 10% per annum compounded annually.

17. The cost of an article was Rs.15500, Rs. 450 were spent on its repairs. If it is sold for a profit of 15% , find the selling price of the article.

OR

The price of sugar goes up by 20% .By how much percentage must a house wife reduce her consumption so that the expenditure does not increase?

18. Use the table below to draw line graph of population (in 1000) of men & women in a village in different years.

Year	2003	2004	2005	2006	2007
Number of men	12	12.5	13	13.2	13.5
Number of women	11.3	11.9	13	13.6	12.8

SECTION D

19. Draw the graph of interest on deposits for a year from the table of values with suitable scale on the axis .

Deposit (in Rs.)	1000	2000	3000	4000	5000
Simple interest (in Rs.)	80	160	240	320	400

- (i) Does the graph pass through the origin ?
- (ii) Use the graph to find the interest on Rs.2500 for a year.

20. Construct a quadrilateral ABCD , where AB = 3.5cm , BC = 6.5 cm, $\angle A = 75^\circ$, $\angle B = 105^\circ$ and $\angle C = 120^\circ$. Write steps of construction.

21. Construct a parallelogram PQRS such that PQ = 5.2cm , PR = 6.8 cm and QS = 8.2 cm .

22. The patients in a hospital are given soup daily in a cylindrical bowl of diameter 7cm. On a particular day, the girls of Kanya Mahavidyalaya decided to cook the soup for the patients. If they fill the bowl with soup to a height of 4cm. then

- i) How much soup is to be cooked for 250 patients in litres?
- ii) Which mathematical concept is used to solve the above problem?
- iii) Which value is depicted by the girls?

23. Simplify: $(x + y) (2x + y) + (x+y) (x-y) - (x+y) (x^2 - xy + y^2)$

24. Find the amount and the compound interest on Rs.10000 for $1\frac{1}{2}$ years at 10% per annum, compounded half yearly. Would this interest be more than the interest he would get if it was compounded annually?

25. Draw a pie chart for the given data :

Favourite food	North Indian	South Indian	Chinese	Others
No. of people	30	40	25	25

26. The weekly wages (in Rs.) of 30 workers in a factory are given below:

830, 835, 890, 810, 836, 836, 869, 845, 898, 890, 820, 860, 832, 833, 855, 845, 804, 808, 812, 840, 885, 835, 835, 836, 878, 840, 868, 890, 806, 840. Make a frequency table with intervals as 800-810, 810-820 and so on using tally marks and draw a histogram.

27. Factorise : $y^8 - 256$

OR

Factorise : $(3m^2 - 2m)(6 - 3m^2 + 2m) - 5$

28. Simplify:

$$\frac{4}{216} \frac{-2}{3} + \frac{1}{256} \frac{-3}{4} + \frac{2}{243} \frac{-1}{5}$$

OR

The distance between Sun and Earth is 1.496×10^{11} m and the distance between earth and moon is 3.84×10^8 m. During solar eclipse moon comes in between Earth and Sun. At that time what is the distance between Moon and Sun?

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