2019
CLASS-VIII
MATHEMATICS

Total marks : 80   Time : 3 hours

General Instructions:
i)   Approximately 14 minutes is allotted to read the question paper and revise the answers.
ii)   The question paper consists of 25 questions.
iii)   All questions are compulsory.
iv)   Internal choice has been provided in some questions.
v)   Marks allocated to every question are indicated against it.
     N.B: Check that all pages of the question paper is complete as indicated on the top left side.

Section - A

1.   **Choose the correct answer from the given alternatives.**

   (a)   How many rational numbers are there between 0 and 4?   **1**
          (i) Only one   (ii) Only two
          (iii) Only three   (iv) An infinite number

   (b) $\left(\dfrac{11}{13}\right)^{0}$ is equal to   **1**

          (i) 0   (ii) $\dfrac{11}{13}$ (iii) 1   (iv) $\dfrac{110}{13}$

   (c)   Which one is a perfect cube?   **1**
          (i) 369   (ii) 444   (iii) 1728   (iv) 4000

   (d)   An umbrella marked at `80 is sold for ` 68. The rate of discount is   **1**
          (i) 12%   (ii) 15%   (iii) 17%   (iv) 20%

   (e)   Which one of the following is an example of a direct variation?   **1**

          (i) $y = 4x$ (ii) $xy = \dfrac{1}{2}$ (iii) $y = 2 + x$ (iv) $y = \dfrac{2}{x}$

   (f)   The product of $4p$ and $4q$ is   **1**

          (i) $16pq$ (ii) $8pq$ (iii) $4pq$ (iv) pq

   (g)   In a // gm WXYZ, m∠W = $(2x + 20)°$ and m∠Y = $(3x –30)°$, then the value of x is   **1**
          (i) 20   (ii) 30   (iii) 40   (iv) 50

   (h)   A quadrilateral may have four   **1**
          (i)   right angles   (ii)   acute angles
          (iii) obtuse angles   (iv)   straight angles

   (i)   The area of an equilateral triangle of side 10cm is   **1**
          (i) $100\sqrt{3}$ cm²   (ii) $50\sqrt{3}$ cm²   (iii) $25\sqrt{3}$ cm²   (iv) $10\sqrt{3}$ cm²

(j)   How much soil will be dug out on digging a pit of dimensions 3 m × 2 m × 5 m?   **1**
(i) 20 m³   (ii) 30 m³   (iii) 40 m³   (iv) 50 m³

Section – B

2.   Simplify: $\dfrac{3}{10} - \left(\dfrac{-3}{4}\right) + \dfrac{7}{5}$ **2**

3.   Determine m if $\left(\dfrac{2}{9}\right)^{m} \times \left(\dfrac{2}{9}\right)^{m+1} = \left(\dfrac{2}{9}\right)^{5}$ **2**

4.   Simplify: $\dfrac{\sqrt{25} + \sqrt{225}}{\sqrt{64} + \sqrt{144}}$ **2**

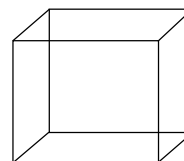5.   Fill in the empty cells to make each of the following a magic square: **2**

		7
	10	
13		11

6.   If 6 workers can complete a job in 20 days, how many workers will be required
to complete the job in 4 days?   **2**

7.   Find the product of $(2m - 3n)(m + n)$ by using horizontal method.   **2**

8.   In the given figure, write

(i)   Number of faces (F)
(ii).   Number of vertices (V)
(iii)   Number of edges (E)

2

9.   The lateral surface area of a cube is 784 sq. cm. Find the length of its side.   **2**

Section – C

10.   **a.** Find the smallest number by which 2925 must be multiplied to obtain a perfect
square. Also, find the square root of the perfect square so obtained.
Or   **3**
b. Find the square root of 21, correct to 2 decimal places.

11.   What is the smallest natural number by which 15435 may be divided so that the
quotient obtained is a perfect cube?   **3**

12.   Find the compound interest on ` 15600 for 1 year at 16% per annum, when the
interest is compounded half-yearly.   **3**

13. X, Y and Z together can do a piece of work in 8 days, while X and Z together can do it in 12 days. How long will Y alone take to do the same work? **3**

14. Divide $15z^3 - 30z^2 + 6z - 12$ by $(3z - 6)$. **3**

15. **a.** Factorise $3p^2 + 18p + 27$ using identity.

Or **3**

b. Factorise $5x^2 + 10xy + 5y^2$ by splitting the middle term.

16. **a.** Solve: $\dfrac{15(2 - y) - 5(y + 6)}{1 - 3y} = 10$

Or **3**

b. Five-sixth of a number is 14 more than half the number. Find the number.

17. **a.** The measures of the four angles of a quadrilateral are in the ratio 2 : 3 : 5 : 8. Find the measure of each angle.

Or **3**

b. The length of one side of a parallelogram is twice the length of the other side. Its perimeter is 24 cm. Find the length of all the sides of the parallelogram.

18. Construct a quadrilateral ABCD, given that: AB = 4 cm, BC = 3.5 cm, m∠A = 70°, m∠B = 60° and m∠C = 90°. (Traces of construction only is required) **3**

19. **a.** A triangle ABC is cut off from a square sheet of metal as shown in the adjoining figure. Find the area of the remaining sheet.
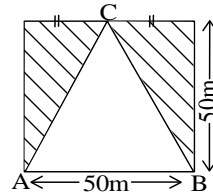
Or **3**

b. A box without lid is in the form of a cuboid. Its dimension is 1.3 m by 0.75 m by 0.2 m. Find the cost of painting its outer surface if the rate of painting is ` 15.00 per square metre.

Section – D

20. **a.** A dealer sold an old car for ` 63000 and gained 5% on it. For how much did he buy the car? If he had sold it for ` 67200, what percent he would have gained or lost?

Or **4**

b. The cost price of an almirah is ` 2800. A trader wants to earn a profit of 20% after allowing 20% discount on the marked price. Find its marked price.
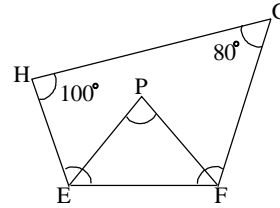
21. **a.** Draw a graph of the equation $3x + 2y = 7$.

Or 4

b. The relationship between Fahrenheit (°F) scale and Celsius (°C) scale is given by the formula 5(F–32) = 9C. Draw a graph to represent this relationship.

22. In the adjoining figure, the bisectors of ∠E and ∠F meet at a point P. If m∠G = 80° and m∠H = 100°, find the measure of ∠EPF.

4

23. **a.** Find the area of the polygon ABCDEFA in the adjoining figure.

Or 4
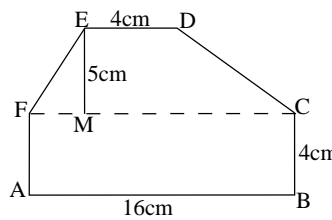
b. A rectangular piece of paper 22cm long and 12cm broad is rolled along its length to form a cylinder. Find the volume of the cylinder so formed.

24. The heights of 50 students of a class measured to the nearest centimetre are given below:

149   156   154   153   152   161   160   158   157   158

150   160   162   154   153   158   156   158   159   160

161   152   159   152   156   160   162   164   156   158

162   158   160   151   153   161   163   154   157   159

161   156   158   159   160   152   154   150   151   157

Prepare a grouped frequency distribution table making classes 145-149, 150-154, 155-159, ... Also, construct a bar graph. 4

25. The number of students admitted in different faculties of a college are given below:

Faculty	Arts	Commerce	Science	Law	Education	Total
Number of students	1200	650	1000	450	300	3600

Represent this data by a pie chart. 4

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