Mathematics

Date: **Class: VII**
Time: 3 hrs   **M. M: 90**

General Instructions:
  1. *Read the question paper carefully and answer legibly.*
  2. *All questions are compulsory.*
  3. *The question paper consist of 31 questions divided into four sections A,B,C and D*
  4. *Section A comprises of 4 question of 1 mark each, section B comprises of 6 questions of 2 marks each, Section C comprises of 10 questions of 3 marks each and Section D comprises of 11 questions of 4 marks each*
 5. *Use of calculators is not permitted.*

Section – A

Q1.   Find the supplement of 75°.   1

Q2.   In ∆PQR and ∆STU, PQ = ST, ∠P = ∠S and ∠Q = ∠T. Name the congruence criterion by   1
which the two triangles will be congruent.

Q3.   Write a pair of negative integers whose difference is -10.   1

Q4.   Compare: 5.05×10^5 and 5.5×10^4 1

Section – B

Q5.   Solve $5l – 4 = 21$.   2

Q6.   a) Express 253.52324 in the standard form.   2
            b) To what power (-2) should be raised to get -32?

Q7.   If $\triangle PQR \cong \triangle XYZ$, write all the corresponding sides and angles of both the   triangles which   2
will be equal.

Q8.   Find the value of *x*. if *l* || *m*   2

Q9.   Shubham withdraws Rs. 6000 from his bank account in which he deposited Rs.8,500 the   2
previous week. If withdrawal of amount from the account is represented by a negative integer,
then how will you represent the amount deposited? Find the balance in Shubham's account
after withdrawal.

Q10.   Find 3 rational numbers between $\dfrac{-2}{5}$ and $\dfrac{-1}{8}$.   2

Q11. In the given figure the arms of two angles are parallel. If $\angle ABC = 75^0$ then find the $\angle DGC$ and $\angle DEF$.   3
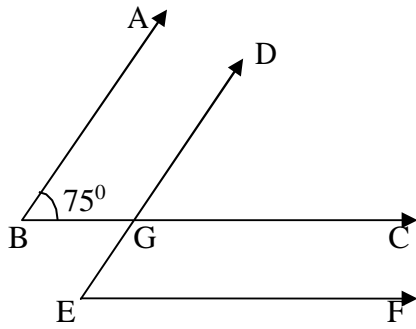
Q12. The perimeter of a triangle is 81cm and the lengths of the sides are in the ratio 2:3:4. Find the lengths of the three sides.   3

Q13. Simplify using laws of exponents:
   a) $(-1)^{199} \times (-2)^4$ 1 ½
   b) $[3^2]^3$

   1 ½

Q14. In an isosceles ΔPQR, in which PQ = PR, PN is the median to the side QR. Is Δ PNQ ≅ Δ PNR ? Give reasons to support your answer.   3

Q15. Anvesha thinks of a number. If she takes 7 away from $\frac{3}{2}$ of that number, the result is 23. Find the number.   3

Q16. In a class of 45 students, $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study Mathematics and the remaining students like to study Science.   3
   a) How many students like to study Mathematics?
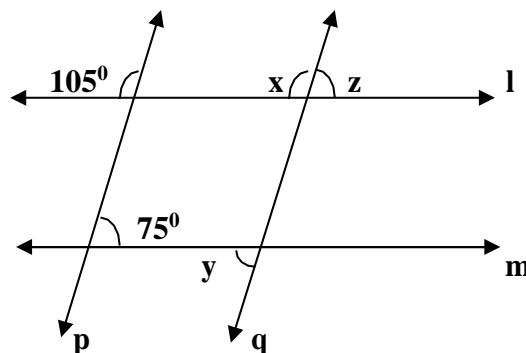   b) How many students like to study Science?

Q17. After simplifying put appropriate sign in the blank.   3
$40 + (-19) - 18$ ☐ $40 - (-19) + (-18)$

Q18. Ranbir's father's age is 5 years more than 3 times Ranbir's age. Find Ranbir's age, if his father is 32 years old.   3

Q19. a) Arrange the following in ascending order : $\frac{-3}{8}$, $\frac{-3}{2}$, $\frac{-3}{4}$ 3
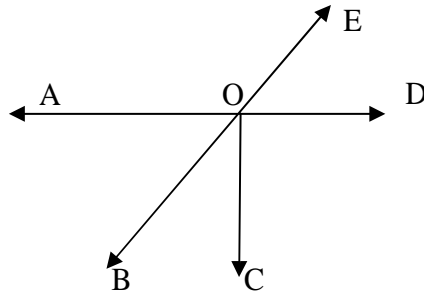
   b) Represent $\frac{-7}{3}$ on the number line.

Q20. Find the value of x, y, z if $l \parallel m$ and $p \parallel q$.   3
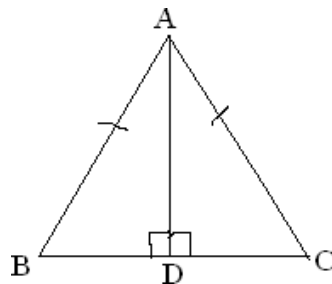
Section – D

Q21. Name the following pairs of angles :   4
     a) Vertically opposite angles.
     b) Adjacent complementary angles.
     c) Linear pair.
     d) Equal supplementary angles.

Q22. ABC is an isosceles triangle with AB = AC and AD is one of its altitudes.   4
     a) State the three pairs of equal parts in ΔADB and ΔADC.
     b) Is ΔADB ≅ ΔADC? Give reason.
     c) Is BD = CD? Give reason.
     d) Is ∠BAD = ∠CAD? Give reason.

Q23.   a) Each side of a regular polygon is 4.6cm in length. The perimeter of the polygon is   1 ½
     23cm. Find the number of sides of the polygon.
    b) How much less is 200.5 km than 306.7 km?   2 ½

Q24. Simplify using laws of exponents: $\dfrac{343 \times 3^3 \times 64}{6^2 \times 2^4 \times 7}$ (Also mention the laws used)   4

Q25. A certain freezing process requires that room temperature be lowered from 40ºC at the rate of   4
5ºC every hour. Find the room temperature 8 hours after the process begins.

Q26. In a class test containing 18 questions, 5 marks are given for every correct answer, (-2) marks   2 + 2
are given for every incorrect answer and zero for not attempting any question.

    a) Garima attempts all questions but only 11 of her answers are correct. What will be her
      score?
    b) One of her friends attempted 12 questions but gets only 6 answers correct. What will be
      her score?

Q27.   Find the value of :   2
                                                         2

      a) $\left[\dfrac{9}{2} \times \left(\dfrac{-7}{4}\right) \right] + \left[(-4) \div \dfrac{2}{3} \right]$
      b) $\left[\dfrac{5}{63} - \left(\dfrac{-6}{21}\right) \right] \div \left[\dfrac{5}{3} + \dfrac{3}{5} \right]$

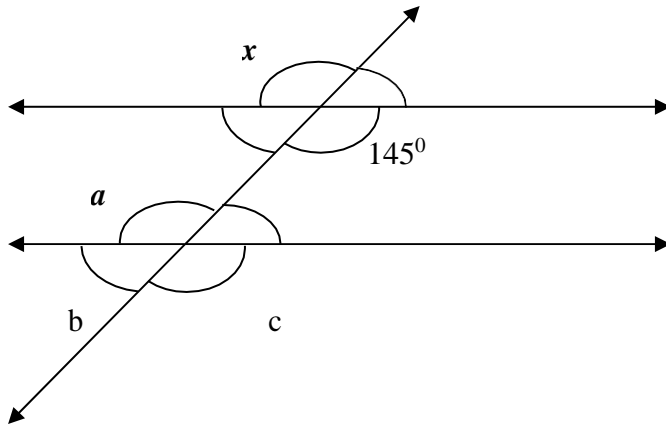Q28. Simplify using laws of exponents: (Also mention the laws used)

    a) $\dfrac{a^2 \times a^3 \times b^3 \times b^4}{a^5 \times b^2}$

    b) $2^0 + 3^0 + 4^0$

3

1

Q29. In the given figure, line *l* || *m* and *n* is transversal. Find the value of *x, a, b and c* .

4

Q30.   a) Seema reads $\frac{1}{4}$ part of a book in 1 hour. How much part of the book will she read in $1\frac{5}{7}$ hours?

    b) If Sanchit finishes the same book in $1\frac{3}{5}$ hours. How much part of the book he would have read in 1 hour?

    c) Who read the book faster?

1.5

1.5

1

Q31. The students of class VII of a school decided to plant trees in the school. Some of the trees were fruit trees. The numbers of non-fruit trees were 5 more than 2 times the number of fruit trees. Find the number of fruit trees planted if they planted 85 non-fruit trees.
What value do you learn from this?

4