

**MODEL PAPER MATHEMATICS (ENGLISH)**

<b>Student Name:</b> _____	<b>Roll No</b>					
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**Section A: Multiple Choice Questions**  
**Marks: 40      Time: 60 minutes**

**Q.2** Choose the correct sentence.

A. She written a letter.

B. She is write a letter.

C. She wrote a letter.

D. She is written a letter.

جوابی پوچھ

1. (A) (B) (C) (D)

2. (A) (B) (C) (D)

3. (A) (B) (C) (D)

4. (A) (B) (C) (D)

اوپر دی گئی جملوں میں صحیح جملہ 2 کا درست جواب C ہے اس کے لئے صحیح ہے۔  
 دوسرے جملوں میں صحیح جملہ 2 کے ساتھ C ہے۔

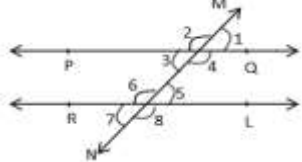
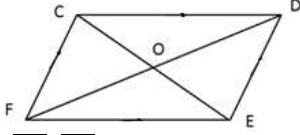
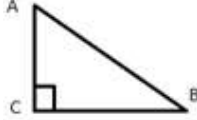
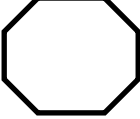
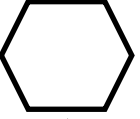
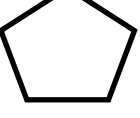

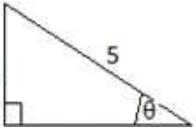
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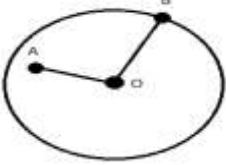
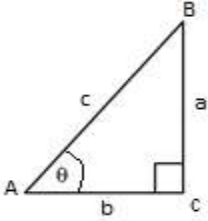
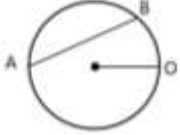

1. ہر سوال کے چار ممکنہ جوابات دیئے گئے ہیں۔ ان میں سے صرف ایک جواب درست ہے۔ جوابات کے لئے دیئے گئے ٹیکہ جو جوابی پوسٹ پر متعلقہ دائرے میں سیاہ رنگ بھریں۔ سوالیہ پوسٹ پر جوابات کے نشان نہ لگائیں۔

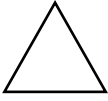
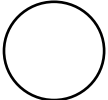
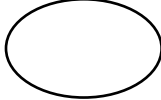
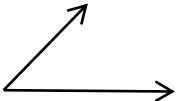
2. جواب میں ایک سے زیادہ دائرے بھرنے سے جواب غلط تصور ہوگا۔

3. سوالیہ پوسٹ پر سوال نمبر مثلاً 1, 2, 3, 4, 5... اور اس کے صحیح جواب مثلاً A, B, C, D کو نوٹ کریں اور اس کے بعد جوابی پوسٹ پر اسی سوال نمبر کے سامنے صحیح جواب کا دائرہ بھریں۔

Q.1	The number of right angle(s) in the given triangle is: <div style="text-align: center; margin: 10px 0;"> </div> <p>A. 0 B. 1 C. 2 D. 3</p>	Q.2	The cost of two pencils and three copies is Rs. 40.  If $x$ = cost of a pencil and $y$ = cost of a copy, then which of the following algebraic equations will represent the given sentence? <p>A. <math>2x + 3y = 40</math> B. <math>2x - 3y = 40</math> C. <math>\frac{x}{2} + \frac{y}{2} = 40</math> D. <math>\frac{2x}{3y} = 40</math></p>
Q.3	Which of the following is a set of even numbers? <p>A. {0, 1, 2, 3, 4...} B. {1, 2, 3, 4, 5...} C. {1, 3, 5, 7, 9...} D. {0, 2, 4, 6, 8...}</p>	Q.4	The number of digits in the square root of 15129 will be <p>A. 2 B. 3 C. 4 D. 5</p>
Q.5	The number of variables in $7xyz^2 + y - x$ , is: <p>A. 1 B. 2 C. 3 D. 4</p>	Q.6	In a cone, if $r = 1$ cm and $h = 1$ cm, then its volume will be <p>A. <math>\frac{\pi}{2} cm^3</math> B. <math>2\pi cm^3</math> C. <math>3\pi cm^3</math> D. <math>\frac{\pi}{3} cm^3</math></p>
Q.7	All of the following are non-terminating and repeating values EXCEPT: <p>A. 1.414213 ... B. 0.123123 ... C. 1.66666 ... D. 2.11111 ...</p>	Q.8	Consider the given figure. <div style="text-align: center; margin: 10px 0;"> </div> <p>Which of the following pairs of angles is equal?</p> <p>A. <math>\angle p</math> and <math>\angle l</math> B. <math>\angle p</math> and <math>\angle m</math> C. <math>\angle p</math> and <math>\angle r</math> D. <math>\angle p</math> and <math>\angle q</math></p>
Q.9	The digits in base 5 system are <p>A. 0, 1, 2, 3, 4, 5 B. 0, 1, 2, 3, 4 C. 1, 2, 3, 4 D. 1, 2, 3, 4, 5</p>	Q.10	The number of times a value appears in a data is called <p>A. frequency. B. class interval. C. class boundary. D. range.</p>

<p>Q.11</p>	<p>In the figure given below, <math>\angle 2</math> and <math>\angle 6</math> are</p>  <p>A. vertically opposite angles.          B. alternate angles.          C. interior angles of the same sides of <math>\overline{MN}</math>.          D. corresponding angles.</p>	<p>Q.12</p>	<p>For a given parallelogram CDEF, which of the following is true?</p>  <p>A. <math>\overline{FC} \cong \overline{FE}</math>          B. <math>\overline{FC} \cong \overline{CD}</math>          C. <math>\overline{FC} \cong \overline{FD}</math>          D. <math>\overline{FC} \cong \overline{DE}</math></p>
<p>Q.13</p>	<p><math>\sec 45^\circ</math> is equal to</p> <p>A. <math>\frac{1}{\sqrt{2}}</math>          B. <math>\sqrt{2}</math>          C. <math>\frac{2}{\sqrt{3}}</math>          D. <math>\frac{\sqrt{3}}{2}</math></p>	<p>Q.14</p>	<p>Consider the given figure.</p>  <p>Which of the following statements is correct according to Pythagoras theorem?</p> <p>A. <math> \overline{AB} ^2 =  \overline{AC} ^2 +  \overline{BC} ^2</math>          B. <math> \overline{AC} ^2 =  \overline{AB} ^2 +  \overline{BC} ^2</math>          C. <math> \overline{BC} ^2 =  \overline{AC} ^2 +  \overline{AB} ^2</math>          D. <math> \overline{AB} ^2 =  \overline{AC} ^2 =  \overline{BC} ^2</math></p>
<p>Q.15</p>	<p>One and only one line passes through two distinct points. The given statement is</p> <p>A. an axiom.          B. a postulate.          C. a theorem.          D. a corollary.</p>	<p>Q.16</p>	<p>In algebraic expression <math>y^3 + 8</math>, <math>y</math> is a:</p> <p>A. Constant          B. Variable          C. Coefficient          D. Exponent</p>
<p>Q.17</p>	<p>The equivalent of <math>(10)_8</math> in base 10 number system will be</p> <p>A. 8          B. 10          C. 16          D. 20</p>	<p>Q.18</p>	<p>All of the following are perfect square EXCEPT:</p> <p>A. 144          B. 169          C. 196          D. 255</p>
<p>Q.19</p>	<p>5,5,5,6,5,7,6, 8, 7</p> <p>Which of the following values has the lowest frequency in the given data?</p> <p>A. 8          B. 7          C. 6          D. 5</p>	<p>Q.20</p>	<p>The factorization of <math>9a^2 - 12ab + 4b^2</math> is equal to</p> <p>A. <math>(9a + 4b)(9a - 4b)</math>          B. <math>(9a - 4b)(9a - 4b)</math>          C. <math>(3a - 2b)(3a + 2b)</math>          D. <math>(3a - 2b)(3a - 2b)</math></p>
<p>Q.21</p>	<p>Which of the following is a hexagon?</p> <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>	<p>Q.22</p>	 <p>In the given triang x which of the following trigonometric ratios ..... be used to calculate the value of x?</p> <p>A. <math>\tan \theta</math>          B. <math>\sin \theta</math>          C. <math>\operatorname{Cosec} \theta</math>          D. <math>\cos \theta</math></p>

<p>Q.23</p>	<p>Consider the given figure.</p>  <p>Which of the following is true?</p> <p>A. <math>m\overline{OA} &gt; m\overline{OB}</math>                  B. <math>m\overline{OA} = m\overline{OB}</math>                  C. <math>m\overline{OA} &lt; m\overline{OB}</math>                  D. <math>m\overline{OA} \geq m\overline{OB}</math></p>	<p>Q.24</p>	<p>If <math>X = \{4, 6, 8, 9, 10, 12, 14, 15\}</math> then one of the subsets of X will be</p> <p>A. <math>\{4, 5, 6\}</math>                  B. <math>\{8, 9, 10\}</math>                  C. <math>\{12, 13, 14\}</math>                  D. <math>\{9, 10, 11\}</math></p>
<p>Q.25</p>	<p>Which of the following represents simultaneous linear equations?</p> <p>A. <math>3x + 5y = 5</math>  <math>x + 2y = 1</math>                  B. <math>\frac{3}{x} + \frac{5}{y} = 5</math>  <math>\frac{1}{x} + \frac{2}{y} = 1</math>                  C. <math>3x^2 + 5y^2 = 5</math>  <math>x + 2y = 1</math>                  D. <math>3x^{-1} + 5y^{-1} = 5</math>  <math>x + 2y = 1</math></p>	<p>Q.26</p>	<p>In <math>\Delta ABC</math>, the trigonometric ratio <math>\frac{a}{b}</math> is equal to</p>  <p>A. Cos <math>\theta</math>                  B. Sec <math>\theta</math>                  C. Tan <math>\theta</math>                  D. Cot <math>\theta</math></p>
<p>Q.27</p>	<p>If <math>X = \{a, b\}</math> and <math>Y = \{a, b, c\}</math> then</p> <p>A. <math>X \subset Y</math>                  B. <math>Y \subset X</math>                  C. <math>X \supset Y</math>                  D. <math>X \supseteq Y</math></p>	<p>Q.28</p>	<p>The power set of <math>A = \{-, +\}</math> will be</p> <p>A. <math>\{\emptyset\}</math>                  B. <math>\{\{-\}, \{+\}\}</math>                  C. <math>\{\{\emptyset, \{+\}, \{-\}\}\}</math>                  D. <math>\{\emptyset, \{-\}, \{+\}, \{+, -\}\}</math></p>
<p>Q.29</p>	<p>In the given figure, <math>\overline{AB}</math> represents</p>  <p>A. chord.                  B. diameter.                  C. secant.                  D. tangent.</p>	<p>Q.30</p>	<p>The degree of the given polynomial <math>3x^2y^3 + x^2y + 4yz</math> will be</p> <p>A. 6                  B. 5                  C. 4                  D. 3</p>
<p>Q.31</p>	<p>Which of the following is a polynomial?</p> <p>A. <math>\sqrt{x} + by</math>                  B. <math>x + by</math>                  C. <math>x^{-1} + by^{-1}</math>                  D. <math>\frac{1}{x} + by</math></p>	<p>Q.32</p>	<p>Consider the given figure</p>  <p>If <math>\overline{AB} \parallel \overline{DE}</math> and <math>\overline{AD} \cong \overline{DC}</math> then</p> <p>A. <math>\overline{CE} \cong \overline{EB}</math>                  B. <math>\overline{CE} \cong \overline{CB}</math>                  C. <math>\overline{CE} \cong \overline{AC}</math>                  D. <math>\overline{CE} \cong \overline{AB}</math></p>

Q.33	<p>If the sides of a triangle are 3cm, 4 cm and 5cm, then its area can be calculated by:</p> <p>A. <math>\sqrt{6(6-3)(6-4)(6-5)} \text{ cm}^2</math></p> <p>B. <math>\sqrt{6(6+3)(6+4)(6+5)} \text{ cm}^2</math></p> <p>C. <math>\sqrt{(6+3)(6+4)(6+5)} \text{ cm}^2</math></p> <p>D. <math>\sqrt{(6-3)(6-4)(6-5)} \text{ cm}^2</math></p>	Q.34	<p>Which of the following is an irrational number?</p> <p>A. 0.375</p> <p>B. 0.666666...</p> <p>C. 0.515151...</p> <p>D. 0.314728...</p>
Q.35	<p>The result of <math>(10)_5 + (44)_5</math> will be</p> <p>A. <math>(54)_5</math></p> <p>B. <math>(104)_5</math></p> <p>C. <math>(114)_5</math></p> <p>D. <math>(414)_5</math></p>	Q.36	<p>Which of the following is a polygon?</p> <p>A. </p> <p>B. </p> <p>C. </p> <p>D. </p>
Q.37	<p><math>4x^2 - y^2</math> is equal to</p> <p>A. <math>(y + 2x)(y + 2x)</math></p> <p>B. <math>(2x - y)(2x - y)</math></p> <p>C. <math>(2x + y)(2x - y)</math></p> <p>D. <math>(y - 2x)(y + 2x)</math></p>	Q.38	<p>If the market price of a wall clock is 1050 rupees and is sold for 750 rupees then discount % will be calculated as</p> <p>A. <math>\frac{1050-750}{1050} \times 100</math></p> <p>B. <math>\frac{1050+750}{750} \times 100</math></p> <p>C. <math>\frac{1050-750}{750} \times 100</math></p> <p>D. <math>\frac{1050+750}{1050} \times 100</math></p>
Q.39	<p>If radius of a sphere is 2cm then its surface area will be</p> <p>A. <math>4\pi \text{ cm}^2</math></p> <p>B. <math>16\pi \text{ cm}^2</math></p> <p>C. <math>32\pi \text{ cm}^2</math></p> <p>D. <math>60\pi \text{ cm}^2</math></p>	Q.40	<p><math>\sin(90 - \theta)</math> is equal to</p> <p>A. <math>\cos \theta</math></p> <p>B. <math>\operatorname{cosec} \theta</math></p> <p>C. <math>-\cos \theta</math></p> <p>D. <math>-\operatorname{cosec} \theta</math></p>


**MODEL PAPER MATHEMATICS (ENGLISH VERSION)**

Student Name _____
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Roll No					
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**Section B: Constructed Response Questions**  
**Marks: 60 Time: 2 hours**

ہدایات: 1- ہر سوال کا جواب دینا ضروری ہے۔  
 2- جواب دینے سے پہلے سوال کو غور سے پڑھیں۔  
 3- سوال کا جواب دی گئی جگہ پر تحریر کریں۔

- Q.1.** (6 Marks)  
 If  $U = \{\text{Sat, Sun, Mon, Tues, Wed}\}$   
 $A = \{\text{Sat, Mon}\}$   
 $B = \{\text{Sun, Tues}\}$   
 Then prove that  $(A \cup B)' = A' \cap B'$
- Q.2 .** Find the square root of  $\sqrt{1.44}$  (6 Marks)  
 i. Using division method                      ii. Using prime factorization method
- Q.3.** Multiply  $(234)_5$  by  $(476)_8$  and write the answer in decimal number system. (6 Marks)
- Q.4.** Naeem bought a chair for Rs. 500 and sold it for Rs. 650. Find profit or loss percentage. (6 Marks)
- Q.5.** Divide  $2x^3 - 4x^2 + 5x - 3$  by  $x - 1$  (6 Marks)
- Q.6.** If  $x - \frac{1}{x} = 4$ , then find values of  $x^2 + \frac{1}{x^2}$  and  $x^4 + \frac{1}{x^4}$  (6 Marks)
- Q.7.** Construct a right angled triangle PQR, with  $m\angle Q = 90^\circ$ , when hypotenuse = 5cm and base = 2 cm.  
 Also write steps of construction. (6 Marks)
- Q.8.** Find the surface area and volume of a sphere, if its radius is 1.4 m. (6 Marks)
- Q.9.** Consider the given figure.  (6 Marks)
- Two lines  $\overline{DX}$  and  $\overline{AY}$  intersect each other at point O.
- Prove that  $\angle 1 \cong \angle 3$
- Q.10.** Following are the marks obtained by Hajira in seven subjects during 1<sup>st</sup> term examinations.  
 73, 55, 71, 66, 66, 73, 55. Find the weighted mean of her marks. (6 Marks)