

INDIAN SCHOOL MUSCAT – MIDDLE SECTION – DEPARTMENT OF MATHEMATICS – (2017 – 18)
MID TERM EXAMINATION – MATHEMATICS – MARKING SCHEME – CLASS 8

S.NO	(SECTION – A) – Q.NO (1 TO 4) – ('1' MARK EACH)	MARKS
1	No. of digits in the square root of 1471369 = 04	1 mark
2	The sum of exterior angles of any polygon is 360°	1 mark
3	Product of rational number and its reciprocal is always is '1'	1 mark
4	$4a^2 b^3 \times (-6 a^3 b^2) \times 3 a b = -72a^6b^6$	1 mark

S.NO	(SECTION – B) – Q.NO (5 TO 10) – ('2' MARKS EACH)
5	$\frac{-16}{20} < \frac{-15}{20} \Rightarrow \frac{-160}{200} < \frac{-150}{200} \Rightarrow \frac{-151}{200} < \frac{-152}{200} < \frac{-153}{200} < \frac{-154}{200} \Rightarrow (\frac{1}{2} + 1 \frac{1}{2})$ marks (or any 4 rational numbers between the rational numbers $\frac{-160}{200} < \frac{-150}{200}$
6	$(n - 2) \times 180 = (11 - 2) \times 180 = 9 \times 180 = 1620 \Rightarrow (\frac{1}{2} + \frac{1}{2} + 2)$ marks
7	Construction of 2 triangles $\Rightarrow (1m + 1m)$
8	$2 \overline{)1296} \quad 1296 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 = 2^2 \times 2^2 \times 3^2 \times 3^2 = 36^2$ $2 \overline{)648} \quad \sqrt{1296} = 36 \Rightarrow (\frac{1}{2} \text{ mark})$ $2 \overline{)324}$ $2 \overline{)162}$ $3 \overline{)81} \Rightarrow (1 \frac{1}{2} \text{ mark})$ $3 \overline{)27}$ $3 \overline{)9}$ $3 \overline{)3}$ 1
9	a) Direct proportion b) Inverse proportion $\Rightarrow (1 \text{ mark} + 1 \text{ mark})$
10	$2 \overline{)256} \quad 256 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^3 \times 2^3 \times 2^2$ $2 \overline{)128}$ $2 \overline{)64}$ $2 \overline{)32}$ $2 \overline{)16} \Rightarrow (- 1 \frac{1}{2} \text{ mark})$ $2 \overline{)8}$ $2 \overline{)4}$ $2 \overline{)2}$ 1 least number to divide with 256 to make it perfect cube is 4 $- \frac{1}{2}$ mark

S.NO	(SECTION – C) – Q.NO (11 TO 18) – ('3' MARKS EACH)
11	$2x + 7x = 180^{\circ}$ (adjacent angles in the parallelogram are supplementary) - ($\frac{1}{2}$ mark + $\frac{1}{2}$ mark) $9x = 180^{\circ}$ - ($\frac{1}{2}$ mark) $x = 20$ - ($\frac{1}{2}$ mark) the angles of parallelogram are : $40^{\circ}, 140^{\circ}, 40^{\circ}, 140^{\circ} \Rightarrow (1 \text{ mark})$
12	Exterior angle of regular polygon = $180 - 135 = 45^{\circ} \Rightarrow (1 \text{ mark})$ No. of sides of regular polygon = $360 \div \text{Exterior angle} = 360 \div 45 = 8 (\frac{1}{2} + \frac{1}{2} + 1)$ mark

S.NO	(SECTION – C) – Q.NO (11 TO 18) – (‘3’ MARKS EACH)												
13	Construction of triangle with right angle – (2 marks) Completion of Square with accurate measurements – (1 mark)												
14	<table border="1" style="display: inline-table; vertical-align: top;"> <tr><td colspan="2" style="text-align: center;">97 - 1 mark</td></tr> <tr><td style="text-align: center;">9</td><td style="text-align: center;">94 09</td></tr> <tr><td style="text-align: center;">+9</td><td style="text-align: center;">81 => 1 mark</td></tr> <tr><td style="text-align: center;">187</td><td style="text-align: center;">13 09</td></tr> <tr><td></td><td style="text-align: center;">13 09 => 1 mark</td></tr> <tr><td colspan="2" style="text-align: center;">0</td></tr> </table> $\sqrt{9409} = 97$	97 - 1 mark		9	94 09	+9	81 => 1 mark	187	13 09		13 09 => 1 mark	0	
97 - 1 mark													
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187	13 09												
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0													
15	2 <u>5324</u> $5324 = 2 \times 2 \times 11 \times 11 \times 11 = 2^2 \times 11^3 \Rightarrow \frac{1}{2}$ mark 2 <u>2662</u> 11 <u>1331</u> The least number to be multiplied with 5324 to make it perfect cube is ‘2’ => $\frac{1}{2}$ mark 11 <u>121</u> 11 <u>11</u> => (2 marks) 1												
16	<table border="1" style="display: inline-table; vertical-align: top;"> <thead> <tr> <th>Amount of money</th> <th>No.of days</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Rs 2000</td> <td style="text-align: center;">8</td> </tr> <tr> <td style="text-align: center;">x</td> <td style="text-align: center;">20</td> </tr> </tbody> </table> => ($\frac{1}{2}$ mark) $x = \frac{2000 \times 20}{8} = 5000 \Rightarrow (2 \text{ marks })$ conclusion : Amount of money paid to the woker for 20 days = Rs 5000 => ($\frac{1}{2}$ mark)	Amount of money	No.of days	Rs 2000	8	x	20						
Amount of money	No.of days												
Rs 2000	8												
x	20												
17	$(2a - 3c) (4a - 5b + 8c)$ $= 2a (4a - 5b + 8c) - 3c (4a - 5b + 8c) \Rightarrow (1 \text{ mark })$ $= 8a^2 - 10ab + 16ac - 12ac + 15bc - 24c^2 \Rightarrow (1 \text{ mark })$ $= 8a^2 - 10ab + 4ac + 15bc - 24c^2 \Rightarrow (1 \text{ mark })$												
18	$-3m^2 - 2m (4n - 3m) - 3m (5m - 4n) \Rightarrow (\frac{1}{2} \text{ mark })$ $-3m^2 - 8mn + 6m^2 - 15m^2 + 12mn \Rightarrow (1 \frac{1}{2} \text{ mark })$ $-3m^2 - 15m^2 + 6m^2 - 8mn + 12mn \Rightarrow (\frac{1}{2} \text{ mark })$ $-12m^2 + 4mn \Rightarrow (\frac{1}{2} \text{ mark })$												

S.NO	(SECTION – D) – Q.NO (19 TO 28) – (‘4’ MARKS EACH)																
19	$\left[\frac{3}{5} \times \frac{8}{7} \right] - \left[\frac{7}{5} \times \frac{1}{2} \right] + \left[\frac{3}{5} \times \frac{6}{7} \right] = \frac{3}{5} \left[\frac{8}{7} + \frac{6}{7} \right] - \left[\frac{7}{5} \times \frac{1}{2} \right] \Rightarrow (1 \text{ mark })$ $\frac{3}{5} \left[\frac{14}{7} \right] - \frac{7}{10} \Rightarrow (1 \text{ mark }), \quad \frac{6}{5} - \frac{7}{10} = \frac{12}{10} - \frac{7}{10} = \frac{5}{10} = \frac{1}{2} \Rightarrow (1 \text{ mark } + \frac{1}{2} \text{ mark } + \frac{1}{2} \text{ mark })$																
20	Construction of triangle with $60^\circ \Rightarrow 2$ marks Completion of parallelogram $\Rightarrow 2$ marks																
21	Construction of perpendicular bisector - (2 marks) Construction of rhombus – (2 marks)																
22	<table border="1" style="display: inline-table; vertical-align: top;"> <tr><td colspan="2" style="text-align: center;">132</td></tr> <tr><td style="text-align: center;">1</td><td style="text-align: center;">01 75 45</td></tr> <tr><td style="text-align: center;">+1</td><td style="text-align: center;">01 => 1 mark</td></tr> <tr><td style="text-align: center;">23</td><td style="text-align: center;">75</td></tr> <tr><td style="text-align: center;">+3</td><td style="text-align: center;">69 => 1 mark</td></tr> <tr><td style="text-align: center;">262</td><td style="text-align: center;">645</td></tr> <tr><td></td><td style="text-align: center;">524 => 1 mark</td></tr> <tr><td colspan="2" style="text-align: center;">121 => $\frac{1}{2}$ mark</td></tr> </table> Least number is to be subtracted from 17545 to make it perfect square is 121 – ($\frac{1}{2}$ mark)	132		1	01 75 45	+1	01 => 1 mark	23	75	+3	69 => 1 mark	262	645		524 => 1 mark	121 => $\frac{1}{2}$ mark	
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23	<table border="1"> <tr> <td colspan="2">8.3 => 1 mark</td> </tr> <tr> <td>8</td> <td>68.89</td> </tr> <tr> <td>+8</td> <td>64 => 1 mark</td> </tr> <tr> <td>163</td> <td>4 89</td> </tr> <tr> <td></td> <td>4 89 => 1 ½ mark</td> </tr> <tr> <td colspan="2">0</td> </tr> </table>	8.3 => 1 mark		8	68.89	+8	64 => 1 mark	163	4 89		4 89 => 1 ½ mark	0		$\sqrt{68.89} = 8.3 \Rightarrow (\frac{1}{2} \text{ mark})$
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24	<p>2 <u>5832</u> $5832 = 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 = 2^3 \times 3^3 \times 3^3 = 18^3$</p> <p>2 <u>2916</u></p> <p>2 <u>1458</u></p> <p>3 <u>729</u></p> <p>3 <u>243</u> => 3 marks)</p> <p>3 <u>81</u></p> <p>3 <u>27</u></p> <p>3 <u>9</u> $\sqrt[3]{5832} = 18 \Rightarrow (1 \text{ mark})$</p> <p>3 <u>3</u></p> <p>1</p>													
25	<table border="1"> <thead> <tr> <th>No.of persons</th> <th>No.of days</th> </tr> </thead> <tbody> <tr> <td>294</td> <td>9</td> </tr> <tr> <td>x</td> <td>7</td> </tr> </tbody> </table>	No.of persons	No.of days	294	9	x	7	=> (1 mark)						
No.of persons	No.of days													
294	9													
x	7													
	<p>$(x) \times 7 = 9 \times 294 \Rightarrow (\frac{1}{2} \text{ mark})$</p> <p>$x = \frac{9 \times 294}{7} = 378 \Rightarrow (2 \text{ marks}) (378 - 294) = 84 \text{ extra workers} \Rightarrow \frac{1}{2} \text{ mark}$</p>													
26	<table border="1"> <thead> <tr> <th>Time</th> <th>Distance</th> </tr> </thead> <tbody> <tr> <td>30 minutes</td> <td>18km</td> </tr> <tr> <td>2hrs 15 minutes = 135</td> <td>x</td> </tr> </tbody> </table>	Time	Distance	30 minutes	18km	2hrs 15 minutes = 135	x	=> (1 ½ mark)						
Time	Distance													
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	<p>$(x) \times 30 = 18 \times 135 \Rightarrow (\frac{1}{2} \text{ mark})$</p> <p>$x = \frac{18 \times 135}{30} = 81 \text{ km} \Rightarrow (2 \text{ marks})$</p>													
27	<p>$5x(2y - 4) + y(3y + 5x) - 75$</p> <p>$10xy - 20x + 3y^2 + 5xy - 75 \Rightarrow \frac{1}{2} \text{ mark}$</p> <p>$10xy + 5xy - 20x + 3y^2 - 75 \Rightarrow \frac{1}{2} \text{ mark}$</p> <p>$15xy - 20x + 3y^2 - 75 \Rightarrow \frac{1}{2} \text{ mark}$</p> <p>$x = 1, y = -1$</p> <p>$15(1)(-1) - 20(1) + 3(-1)^2 - 75 \Rightarrow \frac{1}{2} \text{ mark}$</p> <p>$-15 - 20 + 3 - 75 \Rightarrow 1 \text{ mark}$</p> <p>$-107 \Rightarrow 1 \text{ mark}$</p>													
28	<p>$(3p - 4q)(3p + 4q) - 7q(p - q)$</p> <p>$3p(3p + 4q) - 4q(3p + 4q) - 7pq + 7q^2 \Rightarrow (1 \text{ mark})$</p> <p>$9p^2 + 12pq - 12pq - 16q^2 - 7pq + 7q^2 \Rightarrow (1 \text{ mark})$</p> <p>$9p^2 - 9q^2 - 7pq \Rightarrow (2 \text{ marks})$</p>													