



# PROVINCIAL EDUCATION DEPARTMENT



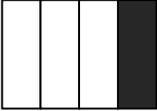
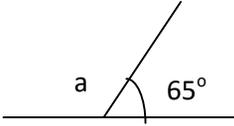
## NORTHERN PROVINCE

PLACEMENT EXAMINATION – 2021

GRADE 9

MATHEMATICS

TWO HOURS

01	If the price of a face mask is Rs.15, Find the price of 20 face masks
02	Simplify: $15.9 + 6.4$
03	Write the shaded part as a fraction of whole in the given figure 
04	Write the next two terms of the given number pattern 19,16,13,..... , .....
05	Fill in the empty cage $20:25 = \square : 5$
06	Remove the bracket and Simplify: $2(x+3) - 5$
07	Find the magnitude of <b>a</b> in the given figure 
08	Add: $110_{\text{two}} + 111_{\text{two}}$
09	If $(x+3)(x+4) = x^2+ax+b$ , Find the suitable values for a and b a= b=

10	Give 7.5 % as a fraction in the simplest form
11	Write the given numbers in scientific notation a) 16.3 b) 0.012
12	Indicate the order in which the keys need to be pressed to obtain the value of $9^2$ in scientific calculator  <div style="display: flex; align-items: center; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">on</div> <span>→</span> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <span>→</span> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <span>→</span> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> </div>
13	A cuboid shaped container of length 25 cm ,width 15 cm and height 20 cm is filled with a liquid. Find the volume of the container in cubic centimeter
14	When a certain number is rounded off to the nearest 10 , the number 90 is obtained. Find the least and greatest value this number can take separately
15	Solve: $8 - y = 6$
16	If $1\frac{1}{3} \times a = \frac{4}{7}$ . Find the value of <b>a</b>
17	Evaluate :  $\frac{3^{-2}}{5^{-2}}$
18	Find the value of <b>2a+b</b> when a =2, b=(-3)
19	If $256 \times 56 = 14\ 336$ , Find the value of $2.56 \times 5.6$ without multiply

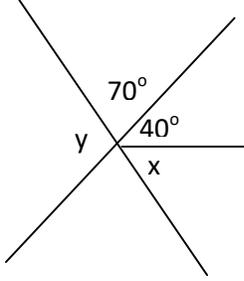
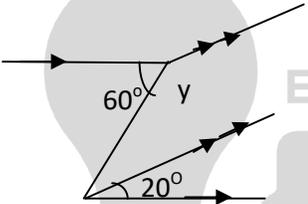
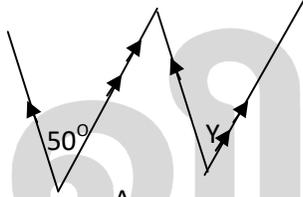
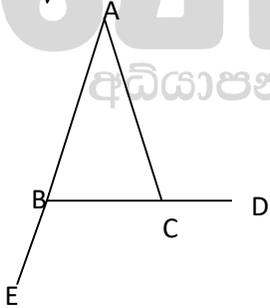
20	A printer makes 480 copies in 10 minutes. Determine the number of copies it makes in 8 minutes
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(20x2=20Marks)

### Part II

Answer only Five questions.

<b>01)</b>	<p>Consider the number pattern with the general term <math>T_n=5-2n</math></p> <p>i) Write the first three terms of this number pattern</p> <p>ii) Find the 15<sup>th</sup> term</p> <p>iii) which term is (-63)</p> <p>iv) Show that (-200) is <b>not a term</b> of this number pattern</p> <p style="text-align: right;">(3+2+3+4=12 Marks)</p>
<b>02)</b>	<p>a) Simplify</p> <p>i) <math>4\frac{3}{7} - \frac{3}{14}</math>    ii) <math>\frac{1}{2} + \frac{2}{3} \times \frac{5}{6}</math>    iii) <math>\left(3\frac{1}{2} \div 1\frac{1}{3}\right)</math> of <math>\frac{5}{14}</math></p> <p>b) Karan decided to grow brinjal in <math>\frac{1}{4}</math> of his land and chilli in <math>\frac{1}{5}</math> of the remaining portion. Then he decided to grow tomato in the remaining portion</p> <p>i) Find the fraction of the portion which grown by chilli as whole</p> <p>ii) Find the fraction of the portion which grown by Tomato as whole</p> <p>(2+3+3+2+2=12 marks)</p>
<b>03)</b>	<p>Construct the given using a pair of compass and the straight edge</p> <p>i) Draw a straight line XY of the length 6 cm.</p> <p>ii) Construct an angle of 60° at Y such that XY is an arm</p> <p>iii) Construct a perpendicular to XY through X</p> <p>iv) Produce the constructed lines so that they intersect. Name their point of intersection as Z and form the triangle XYZ.</p> <p>v) Construct the perpendicular bisector of XZ and name the points it intersects XZ as T and ZY as Q</p> <p>vi) Measure and write the length of TQ</p> <p style="text-align: right;">( 2+3+2+1+2+2=12Marks)</p>
<b>04)</b>	<p>a) Solve</p> <p>i) <math>x+8 = 14</math>    ii) <math>\frac{3a}{4} - 6 = 3</math></p> <p>iii) <math>\frac{1-y}{3} + \frac{y}{2} = \frac{1}{2}</math></p>

	<p>b) The sum of two positive numbers is 28. Difference between them is 2. By taking the two numbers are x and y. Construct a pair of simultaneous equation and solve them.</p> <p style="text-align: right;">(2+2+3+5=12 Marks)</p>
<p><b>05)</b></p>	<p>a) Expand and Simplify  i) <math>(x+6)(x-5)</math> ii) <math>(a-2)(a-3)</math></p> <p>b) Factorize  i) <math>a^2 - 1</math> ii) <math>98 - 2y^2</math></p> <p>c) Find the value of <math>2a - 5b</math> when <math>a = \frac{1}{2}, b = (-\frac{1}{3})</math></p> <p style="text-align: right;">(3+3+2+2+2 =12 Marks)</p>
<p><b>06)</b></p>	<p>a) Find the value of x and y in the given figure</p> <div style="text-align: center;">  </div> <p>a) Find the value of y of the given figures</p> <p>i)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>ii)</p>  </div> </div> <p>a)</p> <p>b) If <math>\angle FCB = \angle ACD</math>, Show that <math>\angle ABC = \angle ACB</math>  (AE And BD are straight lines)</p> <div style="text-align: center;">  </div> <p style="text-align: right;">(4+4+4=12Marks)</p>
<p><b>07)</b></p>	<p>a) A vendor earns 15% by selling a dining table at the price of Rs 69 000. Find the price at which the vendor bought the dining table</p> <p>b) If a commission of 4% is given when a land is sold .what is the commission given for a land value of Rs 4000000.</p> <p>c) Kala and Mala started a business investing Rs 1500000 and 2000000 respectively. At the end of the year they shared the profit of Rs 420 000 according to their investment</p> <p>i) Find the profit sharing ratio in the simplest form</p>

ii) Find the profit received by each person

(3+3+2+4=12 Marks)

