$\frac{\sin}{P}$ | $\frac{\cos}{B}$ | $\frac{\tan}{P}$
$\frac{H}{\cos ec}$ | $\frac{H}{\sec}$ | $\frac{B}{\cot}$

SAHODAY SR. SEC. SCHOOL

MID- TERM EXAMS (2017 – 18) SUBJECT : MATHEMATICS

CLASS : X

TIME : 1 ½ hrs   M. M :30

Note : Qn no1 – 5 (each 2 marks) , Qn no 6 – 9(each 3 marks) &Qn no 10 &11 (each 4 marks).

Q1 If cot A = 8/15 , find the value of sin A and sec A. $\frac{8}{15} = \frac{B}{P}$

Q2Evaluate $2\tan^2 45° + \cos^2 30° - \sin^2 60°$

Q3 From a well shuffled pack of card one card is drawn . find the probability that the card drawn is (i) a king (ii) a card of red colour.   (i) 4/52   (ii)

Q4Show that tan 48 .tan 23 . tan 42 . tan 67 = 1

Q5 A 120 m high tower stands vertically on a ground . From a point on the ground the angle Of elevation of the top of the tower is 60° . find the distance of the poin from the foot of the tower .

Q6 The daily wages of 50 workers is given below

Daily wages (in Rs)	100 – 120	120 – 140	140 – 160	160 – 180	180 – 200
No of workers	12	14	8	6	10

Find the mean wages of the workers.

Q7 prove that   cos A / (1 + sin A) + (1 + sin A / cos A) = 2 sec A

Q8 The following data gives the lifetimes (in hours) of 225 electrical components mode

Lifetimes (in hours)	0 – 20	20 – 40	40 – 60	60 – 80	80 – 100	100 – 120
Frequency	10	35	52	61	38	29

Find the model lifetimes of the components.

Q9 The following table gives production per hectare of wheat of 100 farms of a village

Production (in kg/ha)	50 – 55	55 – 60	60 – 65	65- 70	70 – 75	75 – 80
No. of farms	2	8	12	24	38	16

Draw a less than type Ogive from the data given above.

Q10 State and prove Pythagoras theorem.

Q11 An observer 1.5 m tall 28.5 m away from a chimney. The angle of elevation of the top of the chimney from his eyes is 45°' Find the hight of the chimney.