

MACHAKOS UNIVERSITY
2ND SEMISTER EXAMINATION FOR ARTISAN YEAR 1
APPLIED SCIENCE MECHANICAL /FB/CT/ELECTRICAL /WELDING.
INSTRUCTIONS: ANSWER ALL FIVE QUESTIONS IN THE
ANSWER SHEET.

Q1a) Define the four laws of reflection (8Mks)

b) With aid of simple sketches explain the characteristics of images formed by concave mirrors when the object is at the following

i) Infinity

ii) Object beyond C

iii) Object at C

iv) Object at between C and F

v) Object at F

vi) Between F and P (12Mks)

Q2. A convex Mirror of focal length 9 Cm produces an image on it's axis 6cm away from the mirror. If the images is 3cm high, determine by scale drawing.

a) The object distance from the mirror.

b) The size of the object.

(Nb) Use a suitable scale in this case is 1cm to represent 3 cm of actual length on vertical scale and 1cm to represent 4 cm on horizontal scale. (20Mks).

Q3 (a) Define sound (2Mks)

(b) Name any 4 sources of sound (8Mks)

c) In air the speed of sound is about 330m/s .This speed is dependent on various factors. List them (6Mks)

i)

ii)

iii)

d) Reflected sound is called _____(2Mks)

e) In some hall sound waves are reflected from the walls, floor and ceiling. Since the echo time is short, the Echo overlaps with the original sound. The original sound thus seems to be prolonged. This effect is called _____ (2Mks).

Q4 (a) List 6 types of cast iron (12Mks)

b) Explain Four ways of minimizing friction (8Mks)

Q5 (a) Outline two characteristics why copper is popularly used among non-ferrous materials (4Mks)

b) Explain five properties of copper (8 Mks)

c) List and explain any four properties of brasses (8 Mks)