TEST PAPER: PHYSICS

Time: 45 Minutes **Class:** C.B.S.E. 10

Max. Marks: 30 Marks **Date:** 3rd October 2018

Marking Scheme: *All questions carry 10 marks each. Subparts (A) and (B) carry 3 marks each and subpart (C) carries 4 marks.*

Question 1:

a. Draw following two diagrams:
   i. Refraction of light through a prism
   ii. Refraction of light through two prisms when one of them is kept inverted

   Mark red and violet light in both diagrams

b. The far point of a myopic eye is 80 cm in from of the eye. What is the nature and power of lens required to correct the problem

c. Why do starts twinkle? Answer in detail. Why don't planets twinkle?

Question 2.

a. Solve the following:
   i. An electric refrigerator rated 400 W operates 8 hours per day. What is the cost of energy required to operate for 30 days at 3 Rs per kWh.
   ii. An electric bulb is connected to a 200 V generator. If the current drawn by the bulb is 0.5 A, find its power

b. A resistor has resistance of 176 ohm. How many of these resistors should be connected in parallel so that their combination draws a current of 5 A from 220V supply line

c. Calculate the power used in 2ohm resistance in each of the following circuit
   iii. A 6 V battery with 1 ohm and 2 Ω resistors in series
   iv. A 4 V battery with 12 ohm and 2 ohm resistors in parallel

Question 3.

a. A concave mirror produces 3 times magnified (enlarged) real image of an object placed 10 cm in front of it. Where is the image located?

b. Explain the following
   i. Why is Tungsten used exclusively for filament of electric lamps?
   ii. Why are conductors of electric heating devices, such as toasters and electric irons made of an alloy rather than a pure metal
   iii. Why are copper and aluminium wires usually employed for electricity transmission

c. An object 4 cm in size is placed at 25 cm in from a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image. Find the nature and size of this image.