1) Magenta
2) 11kv
3) (a)
4) Galton whistle - 30kHz - ultrasonic

   Loudness - 120 db - sound pressure level

   Treble - high pitch - sound of cricket

5) a) False, the potential difference between two phase lines will be 400V.

   b) False, in a household electric circuit, electric appliances are connected in parallel.

6) a) to minimize the energy loss

   b) By Joule's law $H = I^2Rt$

      Heat developed in a conductor is increases as the current pass through it increases,

      We know, $P = VI$. In order to minimize the energy loss, there should be transmit electricity at high voltage to

      Reduce the current without change in power.

7) a) Intensity also increases

   b) Intensity of sound is proportional to the square of amplitude of sound

   c) W/m^2

8) speed of sound in air = 340 m/s

   Minimum time required for an echo = 1/10 s

   We know, distance=speed x time

   There for, minimum distance of sound for an echo = 340 x 1/10 =34m

9) a) kWh metre

   b) Given,

      Power= 5 x 60 =300W,   t = 5 hr,   rate per unit = Rs:3

      Energy consumed = Power (in W) x Time (in H) /1000

                        = (300 x 5) / 1000 = 1.5 unit

      Energy consumption in one month = 1.5 x 30 = 45unit

      Electricity charge for one month = 45 x 3 = Rs 135

10) 416Hz, 417Hz

11) (i) Plant trees on the road sides

    (ii) Avoid air horns, loud speakers, etc

12) In the morning and evening sunlight has to travel long distances through atmosphere to reach our eyes. The red colour in sunlight reaches our eyes after travelling long distances without scattering.

13) Its due to persistence of vision of eye. If more than one object is seen in 1/16 second, the feeling of resultant visual effect of all of them remains in the eye. Here the leaves of fan are seen together in 1/16 second.

14) a) A-Green, B-Green

b) Green filter allows only green light to pass through it and absorbs all other colours of sunlight.

Cyan is the combined colour of blue and green, there for cyan filter allows only its colours to pass, here the

Green light reaching the filter allows passing through it and getting green coloured light on the screen

15) a) AC power source

b) Mutual induction

c) Transformer

16) Given, H=50000J,   I=2A,   R=100Ω,   t=?

We have, H=I²Rt

t=H/ I²R   = 50000/ (2x2x100) = 125 s

17) see text book, page 137 fig. 10.7(a)   (connect switch also)

18) a) towards 'S'   (downward)

b) Armature coil doesn't rotate properly, because when AC source is used, the direction of current changes

Continuously and there by happening a continuous change in the direction of force also by Fleming's left hand rule.

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