**2020 FORM 4 TERM 1 ENTRY EXAMS**

**232/2**

**PHYSICS**

**PAPER 2**

**MARKING SCHEME**



**=600**

**ray**

1. Gives a wide field of view.
2. Q= It

= 0.5 x 4 x 60√

= 120C√

1. v= λf

= 150 x 200 x 1000

= 30,000,000

=3.0 x 107 m/s√

1. E = IR

 2= 2I +0.5 I√

2=5/2 I

 I = 0.8 A√

1. Speed = 2d

 t

 = 2 x 400

 2.5

= 320m/s.

1. Light travels in a straight line. Rectilinear propagation of light .√

8. Circuit A

 The cells in A are in parallel, current drawn from each cell in less than in B

 or

 Effective internal resistance in circuit A is less than in B

1. Alternating current disarranges / disorients / upsets the alignment of the dipoles in the domains causing dipoles to lose the alignment

10.

 ***correct rays (2mks)***

 ***nature of the object***

Image is real

11 a) f = 1

 T

 = 1

 0.12

 = 8.333 Hz

 b) New f = 16.666

 A = 1

 

**M**

12. For series 1 = 1 + 1

 Cs 3 1

 = 1 + 3 =4

 3 3

 Cs = 3 = 0.75µF

 4

 for parallel : Ce = (2 + 0.75)µF

 = 2.75µF

1. (a)



**ii)**

1. Periscope

Prism binoculars

Optical fibre

1. a) Its charge stored per unit voltage.



1. The higher concentration of positive charges at sharp end of the conductor causes ionization of the surrounding air√ to produce electrons and positive ions. Electrons are attracted towards the conductor while heavy positive ions drift away diverting the part of the flame.√
2. i) CP=2+6=8µf√

 CT=3x8 = 24 = 2.18 µf.√

 3+8 11

1. Q =CV √

 = 2.18 X 10-6 X 12√

 = 2.616 X 10-5 C√

1. p.d across 2 µf = 2.616 x 10-6√

 8 x 10-6√

 = 3.27V √

**15 (a)**Sound is a form of energy and it comes from vibrations. √These vibrations create sound waves which move through mediums√ such as air and water before reaching our ears.

(b) Loudness

* Pitch.
* Timbre or quality
* Frequency and pitch
* Fundamental tones and harmonics

(c) Time taken = distance / speed = 2600 / 5200 =0.50 seconds√√

(d) Distance travelled = 2d = 250 x2 =500m

(i)Speed at 50C = 331.5+ (0.6 × 5) = 334.5m/s

(ii)Time taken = distance / speed = 500 / 334.5

= 1.5 second

1. (a) rate of flow of change
2. Both bulbs light with the same brightness – they receive the same amount of current

 (II) Only bulb B1 light. Bulb B2 is short circuited

 

1. a)

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b) i) Frequency not affected

ii) Speed reduces

 iii) Wavelength reduces

18 (a) - Amount of current.✓①

 - Number of turns in a coil ✓①

 - Shape of the core ✓①

1. (i)The magnet will be attracted ✓① towards the soft iron core.

The end of the coil facing the magnet becomes South Pole when switch is closed; and the rule turns anticlockwise ✓①

ii) The polarities of the electro-magnet becomes reversed therefore the magnet is now repelled away from iron core ; and the rule turns clockwise ✓①

1. (i) & (ii)



 - Field ✓①

 - Attractive forces ✓①