FORM FOUR CLUSTER KCSE MODEL 7

PHYSICS PAPER 2 ANSWERS

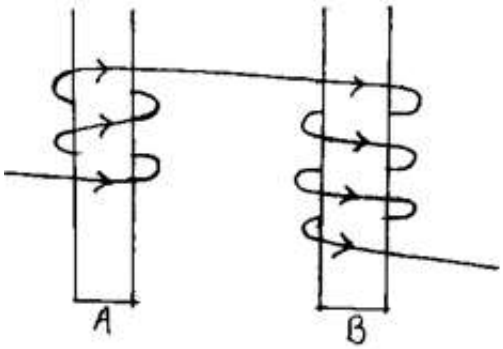
SECTION A (25 Marks)

Answer ALL the questions in this section in the spaces provided.

1.

(a.	$50\text{-}15 = 35^0$;
b)	Position of source of light is not altered;

2.



Correct windings drawn;
direction of current shown;

3. No change in leaf divergence;

   No change distribution in the inside of a hollow conductor;

4.

i.	Varying current in cathode heating circuit;	Do not allow increasing or decreasing Only.
ii.	Varying anode/accelerating voltage;	
iii.	Shielding the test of the body that is not being treated. OR Limiting exposure time.	

5. Refraction;

6.

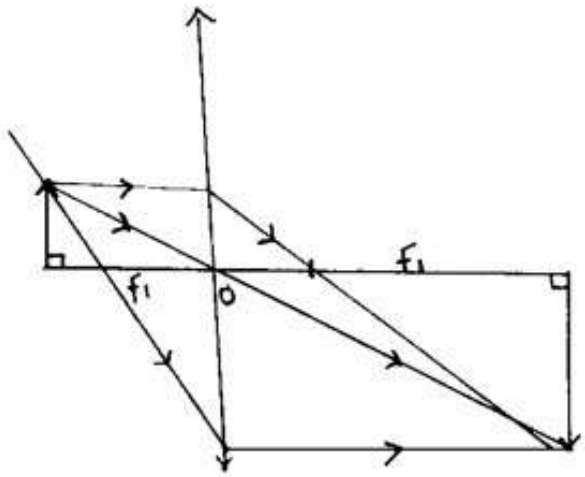
$$I = \frac{V}{\frac{R}{2}} = 2\frac{V}{R} = 4A;$$

Hence a higher current exceeding fuse rating flow;
OR
More current flows; which exceeds the fuse rating;

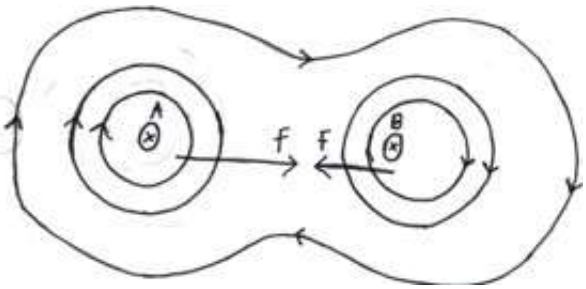
7. -A ward 1 mark for a ray through the optical centre

   . Correct ray to form F1;

   -Correct ray to form F2;



8. Like poles repel while unlike poles attract;

9. 

Magnetic field correctly drawn;

Direction of forces F correctly shown;
10

10. Eddy current;

11.

12.

$\frac{1}{f}=\frac{1}{20}+\frac{1}{-10}$; substitution F = -20cm;	No units deny ½mk Wrong units deny 1mk

1: ½	or	$V_1+\frac{V_1}{2}=12$	Method ;
2: 1		$V_1=8V$	Accuracy;
$V=\frac{1}{3}X\ 12$;		V = 12-8	
=4V;		= 4V	

13.(i).Poluter should show a reading ofOV.

SECTION B (55 Marks)

Answer ALL the question in this section in the spaces provided.

14.(a).(i). Alcohol – produces alcohol vapour; Solid Co2 – cools alcohol vapour below Condensation temperature;

(ii). When rubbed, it is produces electric field Aligning the tracks for clear visibility;

(iii). Radiation from source ionizes air along its Path;Alcohol condenses around these ions; forming droplets or traces.

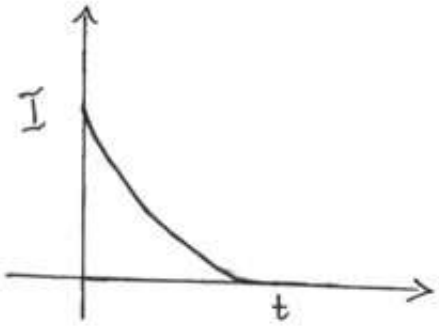
iv. Can detect radiations d1 r and B while electroscope can detect a only. -Can identify/distinguish nature of radiations. (b). t1 = 10 hrs t2 = 10 hr; Taver = 10 hours;

15.

(i). $V_C = OV_1$;
$V_R = 3V$;

(ii). $V_R = OV$;

(iii)



(iv).Quantity o charge stored across C;

16.(a). (i). Minimize collisions of electrons by air particles Which might lower their k.e.;

(ii). When current flows through it, it is magnetized and hence magnetizes the

core; (iii). Those are radiation of energy more than work function of the cathode;

(iv). When light is blocked from reaching the Cathode, no photo current flows; spring pulls the armature back; putting on the burglar Alarm circuit.

(b). During the first half –cycle,

A is positive then D2 and D3 are forward biased hence current flows through RL; In the second half –cycle,

B is positive than D1 and D4 are forward biased hence current pass through RLJ. Direction of current for both cycles is same

17.

(i).Through thermionic emission;

(ii).Zinc sulphide/ phorsphor;

It glows when electrons hit it;

(i). Amplitude, a = 4.5 cm;

V peak = a x y – gain.

=4.5 x 5; sub.

= 22.5v;

(ii). T =0.1 x 4 = 0.4ms;

$$F = \frac{1}{T} = \frac{1}{0.4X10^{-3}}$$

=2500HZ:

17. (a).(i) –Screen position adjusted until a sharp image is obtained on the screen;

-Various corresponding values of U,V are Obtained and recorded;

-average value of f is obtained from

$$\frac{1}{f} = \frac{1}{u} + \frac{1}{v};$$

OR Graph drawn

(ii). Virtual image is formed and so not formed on The screen ;

19. (a)

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(i). Freely suspend each of the rods and note the direction in which it rests;

-The one that comes to rest in a W-S direction is the magnet otherwise it is the iron bar;

(ii). When the magnet is disturbed, it always comes to rest in N-S direction. This is due to attraction of the earth's magnetic field;

b)(i). Dipoles in p align easily that dispose in Q.

(ii). P; P is easily magnetized and strongly magnetized as compared to Q;