**K.C.S.E 1995 PAPER 1 MARKING SCHEME**

1. Micrometer screw gauge
2. Effort would reduce
3. Flow from a to B
4. Pressure difference between liquids in A and B is P = egh where e is liquid, g = acceleration due to gravity and h is height

But force = P x cross section area of siphon, P = F/A

Thus F = egh A Since e.g. A are constants

Fα h

1. No change in flow OR the flow will still continue
2. Oil spread until it is one molecule thick or film taken as a perfect circle or oil drop has been taken as perfect sphere/ cylinder/ uniform thickness
3. The liquid expand uniformly, expansion is measurable ( large enough), thermal conductivity
4. Rectilinear propagation/ light travels in a straight line
5. Water/ or glass are poor conductor of heat
6. Each material is brought in turn to touch the cap. The conductor will discharge the electroscope while the insulator will not ( accept bring near conductor gauge)
7. Can be short – circuited without being destroyed
	* Longer life/ electrolyte never need attention
	* Can stay discharged without being destroyed
	* Can be charged with large currents faster charging
	* More rugged/ not damaged by rough condition of use/ robus
	* Delivers large current, light
8. Surface tension / adhesive forces supports water column or more capillarity in tube 2 than tube 1
	* Surface tension is the same in both tubes and equal to the weight of water column supported
	* Narrow tube has longer column to equate weight to wider tube
	* Volume of water in the tubes is same hence narrower tube higher column
9. – Length of conductor in the field

- Angle between conductor and fields

1. All ferromagnetic materials are attracted by magnets or any magnetic materials is attracted
2. – increasing the tension

- Reducing the length

1. At equilibrium sum of clockwise moment = sum of anti – clockwise moments

Clockwise moments = P x X = QY

 Px = Qy

1. h glass = V air / V glass 1.5 = 3 x 108 √ g

Vg = 3 x 108 / 1.5 = 2 x 108 ms-1

1. V = f λ sine V is constant reducing f to 1/3 ⇒ λ increases 3 fold
2. While light is composed of seven colour different/ many colour. For each colour glass had different value of refractive index/ different velocities of different λ. So each colour is deviated differently causing dispersion
3. A body at rest or in state of uniform motion tends to stay in that state unless an unbalanced force acts on it.
4. Heat capacity is quantity of heat required to raise the temperature of the body by 1 k or 1 0C while, specific heat capacity is quantity of heat required to raise temperature of unit mass of body by 1 k/ 10 C.
5. (If x ≠z but both above y give 1 mk. Accept difference of 1.0 mark)



 hX = hZ > hY

1. – Reducing - Increasing
2. Polarization

|  |  |  |
| --- | --- | --- |
| Type of radiation | Detector | Uses |
| Ultra violet | Photographic paper fluorescence material | Cause ionization kills bacteria OR operating photosular cells photography |
| Infrared | Phototransistor blackened thermometer | Warmth sensation |
| Radio waves | Radio receiver or TV receiver | Communication |

1. E2 = E1 + h f i or E2 – E1= h = c/λ

h= plank constant

c- Velocity of light

λ- Wave length of light

1. – Lead - Very dense/ has high atomatic mass
2. Extrapolation on graph ( line to touch frequency)

Reading on graph to (4.0 + - 0.2) x 1014Hz

1. Lines parallel to the one shown but cutting of axis further in
2. Quality / Timbre
3. X = 14
4. The point where the weight of the body acts
5. Temperature of source be the same

- Length of rods be the same / wax

- Amount of wax (detector) be the same

1. 



**K.C.S.E 1995 PHYSICS PAPER 232/2 MARKING SCHEMES**



1. (a)

(b) Constant Vel0 Uniform vet - zero accln

(c) √4.5 = 118 – 50 = 15m/s 15.5 + -1.5 ( 14-17)

 6.5-2

 √ 6.5 = 112 – 70 = 6 m/s (4=6)

 7

 Average accln = ∆v = v – 11 = ( 6-15)

 t t 2

 = - 4.5 m/s2

2. l = 7 + l + l

 RC R1 R2 R3

 = 1 + 1 + 1

 6 + 3 6

 = 1

 6

 RC = 6 = 1.5 Ω

 4

 (b) Total resistance = 1.5 + 2.5 = 4 Ω

 E = 1(YFR) Or l = V

 R

 2 = Ll

 Current through xy l = 0.5 A

 P.d across yz = 0.5 x 1.5 V

 s= current through 3 Ω = 0.5 x 1.5 = 0.25 A

 3

 (c) R = /L A

 I = RA = 6 x 5.0 x 10-6 Ωm2

 L 1.0 m

 = 3.0 x 10-5Ω m

3. (a)





 (ii) Magnification = V Isign = 1.1 OR 1.75

 u Osign 1.6 2.5 = 0.7 ± 0.05

1. l = l + l l = 10

f u v u 60

 l = l + l u = 6cm

10 u v

l = l + l Objects is 6 cm from the lens

U 10 15

4 (a) Lens symbol object between f & F 2 appropriate rays position of image

 Image correctly drawn

 The diagram in figure 3 shows a certain eye defect

 (b) (i) Name of defect is long sightedness

 (Refer to the diagram in the figure 3 above)

(c) (i) For water not to pour weight of the water must be less centrifugal force OR for water to pour out MV2 > mg

 r

 (ii) Frictional force F = Centripetal force

 MV2 = 1200 x (25)2

 R 150

 = 5.0 x 103N

5. (a) (i) The magnitude of the induced e.m.f is directly proportional to the rate at which the conductor cuts the magnetic field lines

The induced current flows in such a direction as to oppose the changes producing it.

(ii) Plugging a magnetic into a coil

* in speed its g twins as straight of magnetic field
* Results in an increased in the induced e.m.f

(b) (i) Energy is neither created nor destroyed

 Make power constant

 VU = Joules ( ½ ) current = charge ( ½ )

 Count time

 P = IV

 For large V, 1 must lower for power input to be equal to power output

(ii) Vs - Vp OR Vs - Na

 Ns Vp Vp NP

 Ns = Vs x Np = 9 x 480

 Vp 240 Ns = 18

**SECTION II**

6. (a ) Progressive wave- Wave profile moves along with the speed of the wave

 Stationary wave – wave profile appears static

Progressive wave – Phase of points adjacent to each other is different

Stationary wave – All points between successive node vibrate in phase

Progressive wave – Energy translation in the direction of the wave travels

Stationary wave- No translation of energy but energy associated in the wave

(b) (i) A glass slide i.e. blackened with soot or paint lines are drawn close together using

a razor blade or pin.

(ii) Path differences equals to an odd number of half wavelengths or completely out of phase ( 1800)

(iii) Photometer / photocell or thermometer with a bulb

7. (a) Common or sillen ( semiconductor) is doped with impurity atoms which trivalent ( e.g boron or indium) intensity in currency on pole group 4 doped with trivalent

 (b) p-n-p emitter and carries made of p type material are of n- type material for charge carries holes

* n – p – n – emitter and collector made of n- type material are made of p- type ( or charge carries electrons)

(c) At the middle of the reaction of a curve a tangent is drawn change on output (∆V0) is determined and a corresponding change input ( ∆V1) also attained change amplification.

(d) (i)

(ii) i2 = lC r lB

(e) Base – emitter – forward biased Base collector – reversed biased