

# SSLC MODEL EXAMINATION FEBRUARY 2019

## ANSWER KEY PHYSICS

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Answer any 4 questions each carries 1 score.

- 1.Red
- 2.Graphite brush
- 3.32<sup>0</sup>F
- 4.Red
- 5.256Hz

Answer any 4 questions each carries 2 score.

6.

Green Energy	Brown Energy
Solar cell	Thermal power station
Biomass	Atomic reactor

7. Humidity, Density

8. The moon has no appreciable atmosphere to do the scattering, so the sky appears dark.

9. (i) B to A  
(ii) Fleming's right hand rule.

10. In case the metal body of the electrical appliance comes in contact with a live wire electricity will flow into the earth through the earth pin of three pin plug. Hence electric shock can be avoided.

Answer any 4 questions each carries 3 score.

11.

(a) In fluorescent lamps ultraviolet rays are absorbed by this fluorescent coating and re-emitting white light.

(b) Electronic ballasts are used to provide high voltage for initial discharge.

12.

(a) Thermal expansion.

(b) Absolute zero.

© 310K

13. (a) Mutual induction.

(b)  $N_p = 1500$ ,  $N_s = 7500$ ,  $I_p V_p = 100W$ ,  $V_s = 250 V$

$$V_p = \frac{V_s N_p}{N_s}$$
$$= \frac{250 \times 1500}{7500} = \underline{50 V}$$

$$\text{© } I_p = \frac{V_s I_s}{V_p} = \frac{100}{50} = \underline{2A}$$

14. (a) The current through the filament increases when we join it and intensity of light also increases

$$(b). R = \frac{V^2}{P} = \frac{240 \times 240}{40} = \underline{1440 \Omega}$$

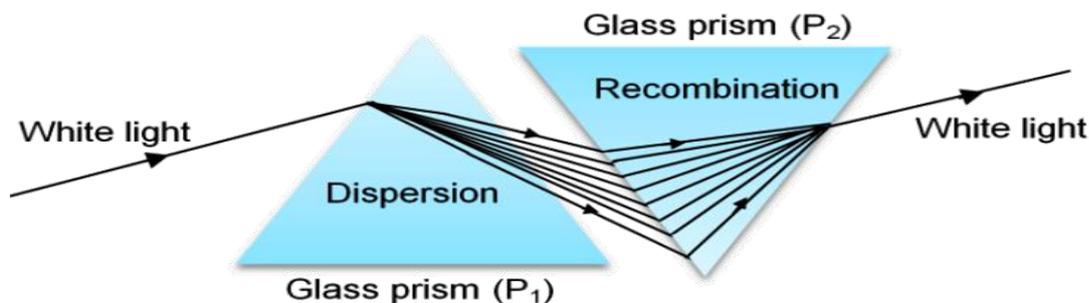
15. (a)  $M_1 C(\theta_1 - \theta_2) = -[M_2 C(\theta_2 - \theta_1)]$  (cancel C from both side)  
 $M_1(\theta_2 - \theta_1) = -[M_2(\theta_2 - \theta_1)]$  ( Negative sign indicates heat loss)

$$\begin{aligned} &= 2X(\theta_2 - 353) = -[8X(\theta_2 - 298)] \\ 2\theta_2 - 706 &= -8\theta_2 + 2384 \\ 10\theta_2 &= 2384 + 706 \\ 10\theta_2 &= 3090 \\ \theta_2 &= 3090 / 10 \\ &= \underline{309 K} \end{aligned}$$

(b) Yes, the total heat energy will be split into two parts so there will be a change in heat energy in two vessels.

Answer any 4 questions each carries 4 score.

16. (a) Light dispersion .  
 (b) Variation in optical density of medium and Light with different frequency waves (composite light)  
 (c)



17. (a) Coal.  
 (b) The uncontrolled mining of fossil fuels will affect future because fossils fuels are non-renewable source of energy it cannot easily reproduce and amount decreasing very fast.  
 (c) Atmospheric pollution ,Global warming etc.

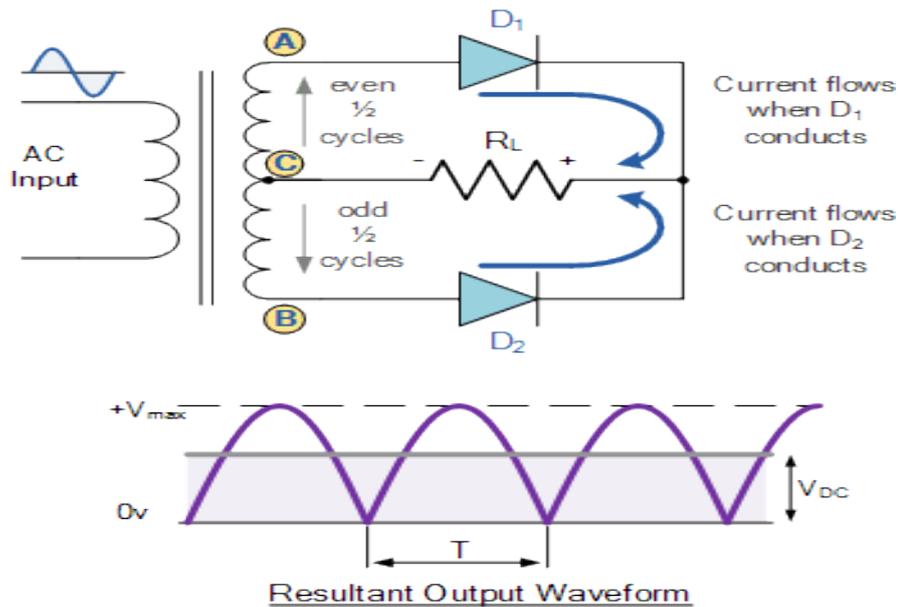
18. (a) Wave on the water surface –Transverse wave : particle vibration perpendicular to the direction of propagation.

Sound wave – Longitudinal wave: particle vibration parallel to the direction of propagation.

$$(b) v = 340\text{m/s} , f = 1360 \text{ Hz}$$

$$\lambda = \frac{v}{f} = \frac{340}{1360} = \underline{0.25\text{m}}$$

19. (a) The process of converting alternate signals into direct one. In case of electric current converting AC to DC.  
 (b) & (c)



20. (a) Power station ,Substations and Distribution transformer.  
 (b) Main cause is due to the resistance of conductor, supply voltage and current the electric energy losses in the form of heat.  
 (c )The power transformer shift the voltage from lower level to higher level and shift down the current so as to keep the power be constant and can reduce the heat loss based on joules law.

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If you noticed any mistakes or confusions, kindly informs me  
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