SMILE 2023-SSLC Annual Examination February 2023
Answer key-Physics
SET -A

Q. No.	Value Points	Score
1	Butane	1
2	Right hand thumb rule	1
3	Optic centre	1
4	Enlarged and erect images are formed when the object is placed between focus and pole	1
5	Persistence of vision	1
6	a. light emitting diode b. long life , high efficiency, use less electric energy	1 1/2 + 1/2
7	a. DC motor b. Electrical energy to mechanical energy	1 1
8	Bar magnet • magnetic strength can not be changed • poles are permanent solenoid • magnetism is temporary • polarity can be changed	2
9	a. 1. Number of turns of the coil 2. Strength of magnet b. Fleming's right hand rule	1 1
10	a. same as object b. between C and F c. between C and F d. between P and F	1/2 1/2 1/2 1/2
11	a. short circuit, over loading b. excess current, more heat generated , fuse wire melts as it has low melting point	1 2
12	a. f= uv/u+v u= -15 cm, v= - 10 cm f= -15 x -10(-15+ -10) 150/-25 = -6 cm b. m= -v/u m= -(-10)/ -15= - 2/3	1 1 1
13	a. 90 b. total internal reflection c. endoscope, communication cables (OFC)	1 1 1
14	a. That does not cause environmental pollution is green and that cause environmental pollution is brown Green brown solar cell atomic reactor biogas thermal power stations	1 2

15	a. concave lens	1
	b. short sightedness/near sightedness/ myopia	1
	c. size of eye ball is large	1
	focal length is less/power is more	
16	a. series	1
	b. 4 Ω	1
	c. H = I^{2}Rt	
	I = 1A, R= 8 Ω, t=50 s	2
	H = 1 x 8 x 50 = 400 J	
17	a. brush	1
	b. use split rings in place of slip rings	1
	c. - for drawing correct graph -	2
18	a. step down	1
	b. secondary	1
	c. Ns/Np = Vs/Vp	
	Ns = Np x Vs/Vp	
	Ns = 6000 x 12/ 240 = 300	2
19	a. Sun light consists of seven colours having different wave length. Rate of refraction depends on wave length.	2
	b. blue has less wave length, scattering is more	2
20	a. - for completing ray diagram -	2
	b. real , inverted	1
	c. between F and lens	1