

Country Team ID Code: 1) 2) 3) 10thInternational Junior Science Olympiad,
Pune, IndiaTime : 3 hrs
Marks : 40

Experimental Tasks

Task **C** : Extraction of lycopene from tomato

Total Marks: 6.0

Absorbance of extract:

C.Q1 Observation Table C.1

[3.5 Marks]

	Current in mA	Blue LED	White LED
1	I_s	0.8 – 1.0 mA	0.6 mA and above
2	I_l	0.0 – 0.08 mA	~ 0.4 mA
Percentage of light transmitted		0 to 8% [0.25]	30 – 70% [0.25]

Is (Blue LED) 0.8 – 1.0 mA

[1.5]

Is (Blue LED) 0.6 – 0.8 mA and 1.0 – 1.2 mA

[0.75]

Is (White LED) 0.6 mA and above

[1.5]

Is (White LED) 0.3-0.6 mA

[0.75]

Percentage transmitted in each case

[2 x 0.25 = 0.5]

Questions

C.Q2

[1.0 Mark]

If the test tube **Ab** (containing the solvent) was removed from between the photodiode and the white LED,

- The current measured would be less than I_s
- The current measured would be more than I_s
- The current measured would be equal to I_s

Write the correct option in the box below.

a)

Country

Team

ID Code: 1)

2)

3)



10th

International Junior Science Olympiad,
Pune, India

Time : 3 hrs

Marks : 40

Experimental Tasks



C.Q3

[1.5 Marks]

Which of the following can you *deduce from your observations in the experiments* on transmitted light. Indicate your answers as YES (Y) or NO (N) in the table below.

- a) Lycopene absorbs more blue light relative to other parts of the visible spectrum.
- b) Lycopene preferentially absorbs light in the red and yellow parts of the spectrum.
- c) Lycopene is an antioxidant.
- d) Red and yellow parts of the spectrum are absorbed relatively less compared to blue parts of the spectrum.
- e) Blue light passes through the solution better compared to red light.
- f) Lycopene absorbs light equally across the spectrum.

a)	Y
b)	N
c)	N
d)	Y
e)	N
f)	N

Each correct option

[0.25]