

**11. Light, Shadows and Reflection Solved Exercise (By: J S Mishra)**

1. Rearrange the boxes given below to make a sentence that helps us understand opaque objects.

OWS   AKE   OPAQ   UEO   BJEC   TSM  
SHAD

Ans:

OPAQUE OBJECTS MAKE SHADOWS

2. Classify the objects or materials given below as opaque, transparent or translucent and luminous or non-luminous:

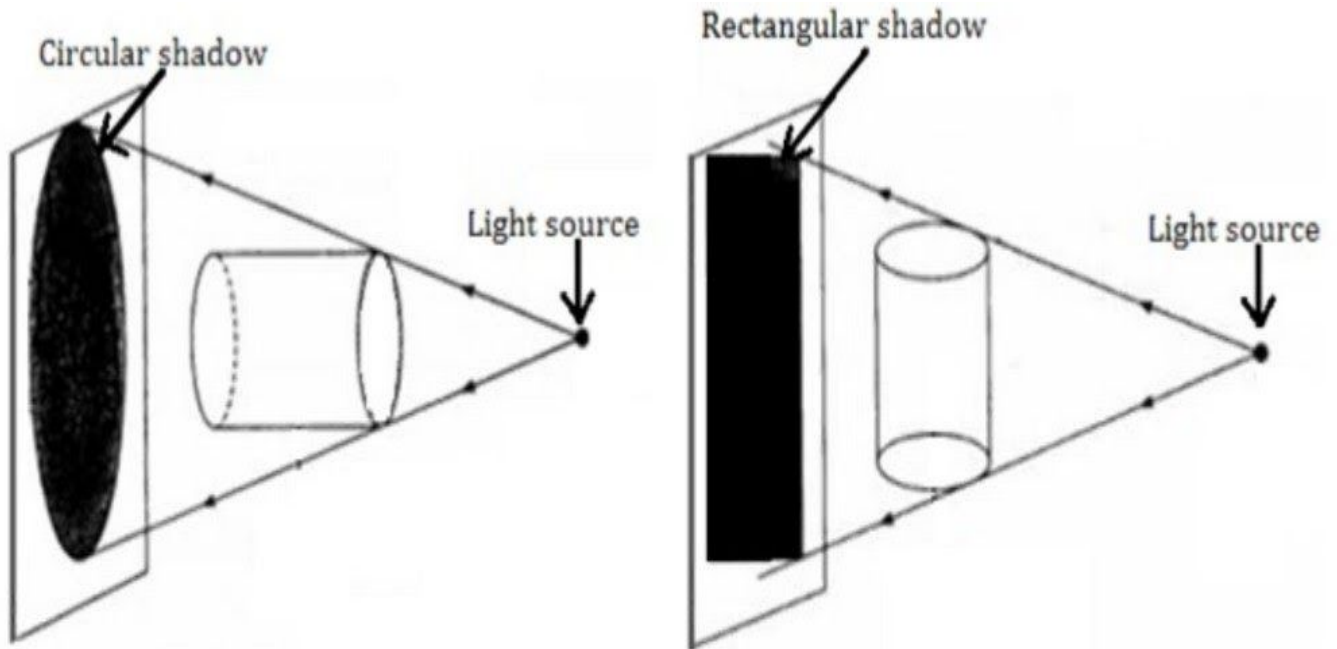
Air, water, a piece of rock, a sheet of aluminium, a mirror, a wooden board, a sheet of polythene, a CD, smoke, a sheet of plane glass, fog, a piece of red hot iron, an umbrella, a lighted fluorescent tube, a wall, a sheet of carbon paper, the flame of a gas burner, a sheet of cardboard, a lighted torch, a sheet of cellophane, a wire mesh, kerosene stove, sun, firefly, moon.

**Ans:**

OBJECT	OPAQUE	TRANSPARENT	TRANSLUCENT	LUMINOUS	NON-LUMINOUS
Air	—	✓	—	—	✓
Water	—	✓	—	—	✓
A piece of rock	✓	—	—	—	✓
A sheet of aluminium	✓	—	—	—	✓
A mirror	✓	—	—	—	✓
A wooden board	✓	—	—	—	✓
A sheet of polythene	—	—	✓	—	✓
A CD	✓	—	—	—	—
Smoke	—	—	✓	—	✓
A sheet of plane glass	—	✓	—	—	✓
Fog	—	—	✓	—	✓
A piece of red hot iron	✓	—	—	✓	✓
An umbrella	✓	—	—	—	✓
A lighted fluorescent tube	✓	—	—	✓	—
A wall	✓	—	—	—	✓
A sheet of carbon paper	✓	—	—	—	✓
The flame of a gas burner	✓	—	—	✓	—
A sheet of card board	✓	—	—	—	✓
A lighted torch	✓	—	—	✓	—
A sheet of cellophane	—	✓	—	—	✓
A wire mesh	—	—	—	—	✓
Kerosene stove	✓	—	—	✓	—
Sun	✓	—	—	✓	—
Fire fly	✓	—	—	✓	—
Moon	✓	—	—	—	✓

**3. Can you think of creating a shape that would give a circular shadow if held in one way and a rectangular shadow if held in another way?**

**Ans:** Yes, a cylindrical shape is the one that would give a circular shadow if held in one way and a rectangular shadow if held in another way. Its circular ends will form a circular shadow when kept in the way of light whereas its curved sides will give rectangular shadow.



**4. In a completely dark room, if you hold up a mirror in front of you, will you see your reflection in the mirror?**

**Ans:** No, we will not see our reflection in mirror in a dark room because an image is formed only when the light gets reflected by the mirror whereas in a dark room, there is no light to cause reflection hence, no image will be formed.