TOPIC 15.4: GERMINATION
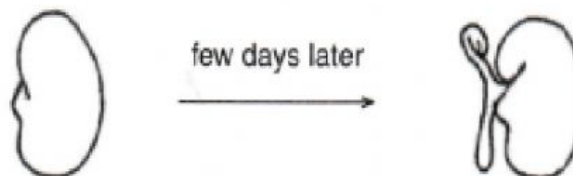
1. Figure below shows a maize seed growing into a seedling. What are the necessary conditions for the seed to grow?
   (SPE/2009/Q24)

   A. Water, sunlight and oxygen.
   B. Water, soil and sunlight.
   C. Water, oxygen and carbon dioxide.
   D. Water, oxygen and suitable temperature.

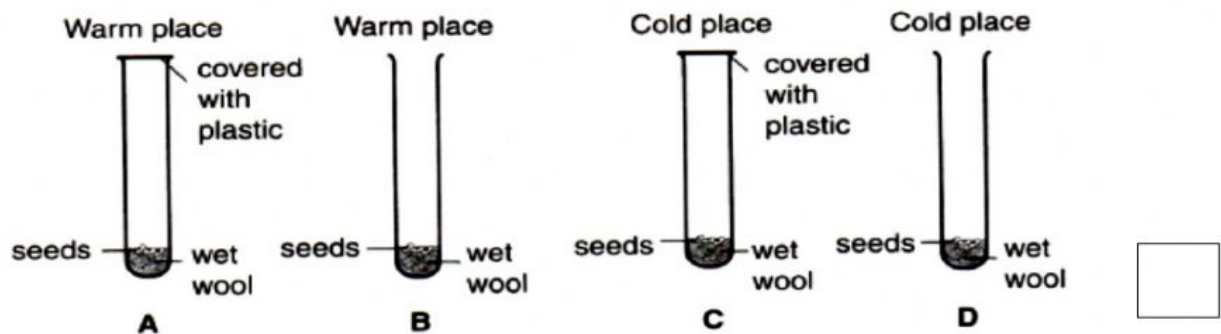2. Figure below shows the early development of a mung bean seed.

   Which of the following are conditions needed for the seed to develop well?
   (SPE/2015/Q37)

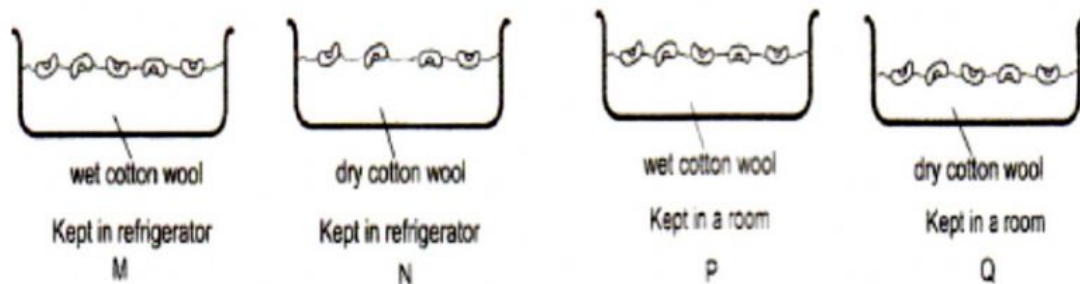 | | Water | Oxygen | Temperature |
   |----|-------|--------|-------------|
   | A. | X | X | Cold |
   | B. | X | X | Warm |
   | C. | / | / | Warm |
   | D. | / | / | Cold |

   Key: / = yes   X = no

3. The experiments below are used to investigate the conditions needed for germination. In which test tube will germination take place?
(SPE/2013/Q36)

Warm place	Warm place	Cold place	Cold place
covered with plastic		covered with plastic	
seeds — wet wool	seeds — wet wool	seeds — wet wool	seeds — wet wool
A	**B**	**C**	**D**

4. Figure below shows the different set ups prepared by year 8 students to investigate the effect of water on germination of seeds. Which set ups should they compare so that the experiment carried out is fair?
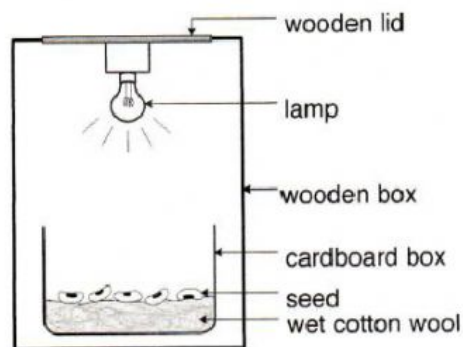

wet cotton wool	dry cotton wool	wet cotton wool	dry cotton wool
Kept in refrigerator	Kept in refrigerator	Kept in a room	Kept in a room
M	N	P	Q

(SPE/2017/Q36)
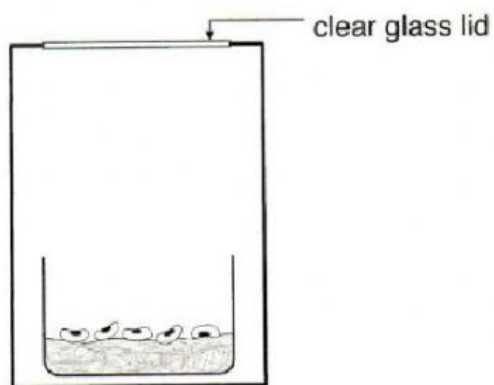
A. M and Q.
B. M and P.
C. N and Q.
D. P and Q.

5. A student carried out an experiment to investigate if light is required for germination of seeds as shown in figure below.
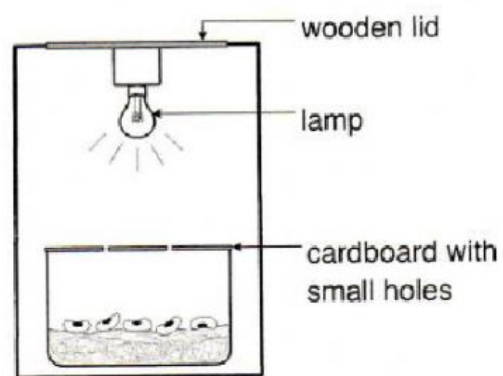

The same type of seeds were put in another set up. The seeds were watered daily using the same volume of water.

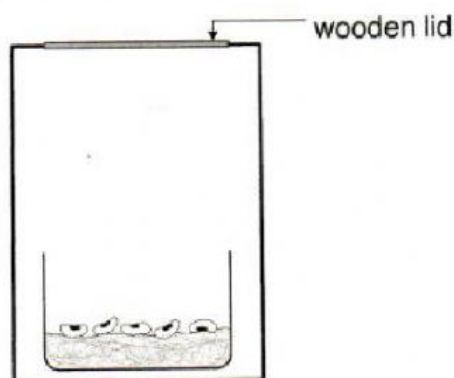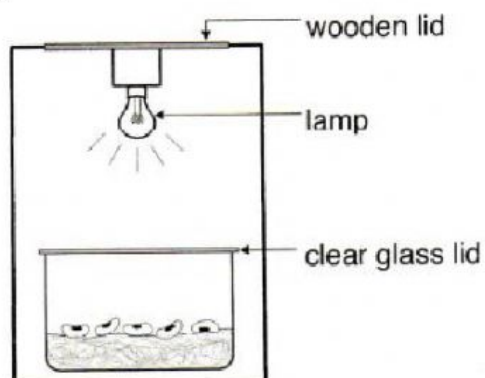Which of the following set up ensures that the experiment carried out was a fair test? (SPE/2018/Q37)
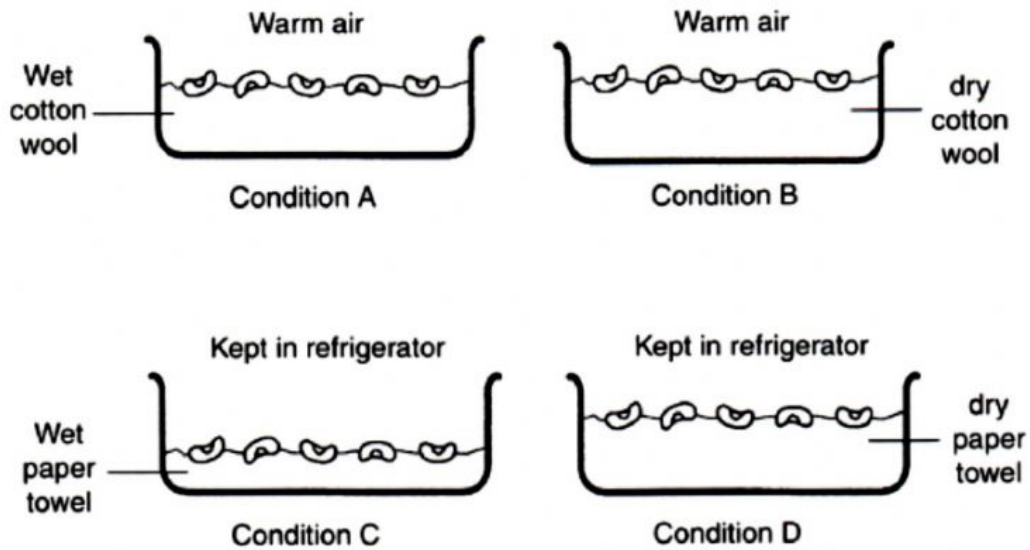
A.

clear glass lid

B.

wooden lid

lamp

cardboard with small holes

C.

wooden lid

D.

wooden lid

lamp

clear glass lid

6. Adam and Hafizah set up experiments A, B, C and D in figure below. They want to find out the conditions needed for the seeds to germinate.
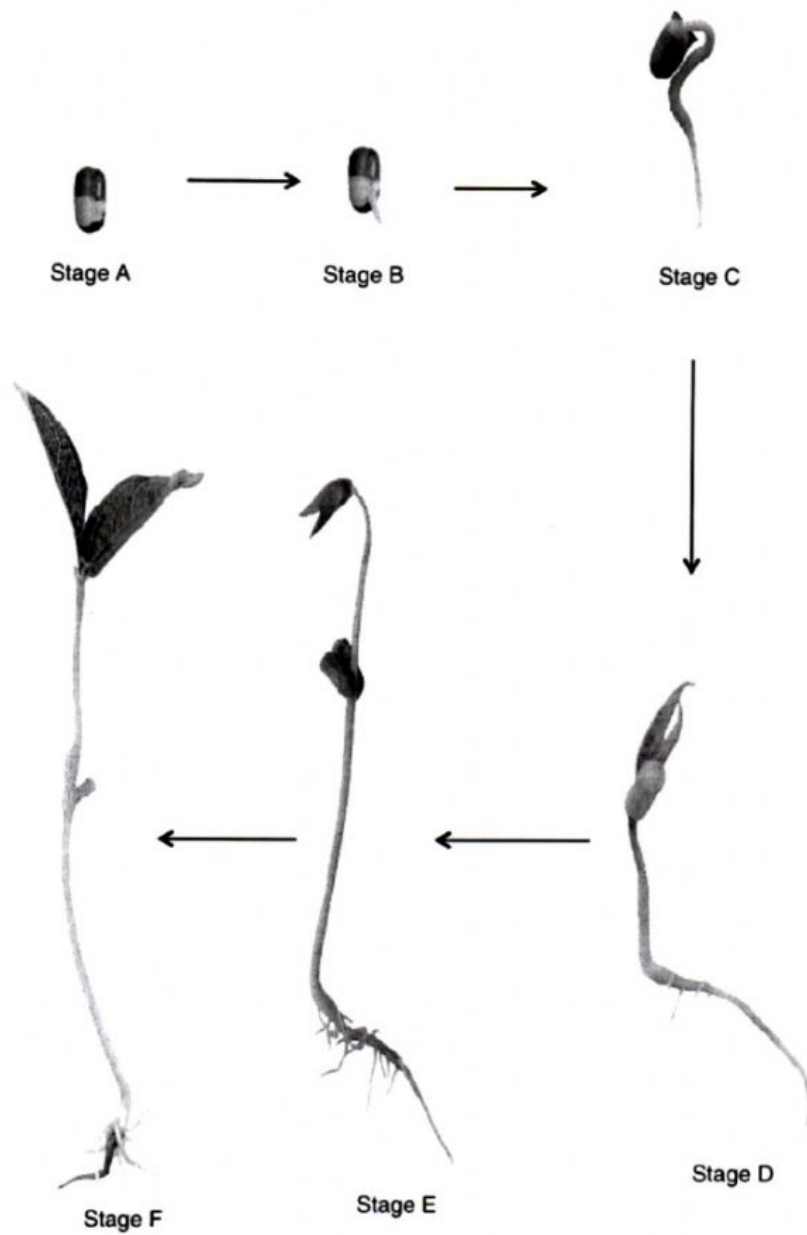(SPE/2016/Q47)

Warm air

Wet cotton wool

Condition A

Warm air

dry cotton wool

Condition B

Kept in refrigerator

Wet paper towel

Condition C

Kept in refrigerator

dry paper towel

Condition D

a) In which of the set up would the seeds most likely to germinate? [1]

_____

b) Explain your answer in (a). [1]

_____

c) The experiment carried out by Adib and Hafizah is not a fair test. Why is the experiment not a fair test? [1]

_____

_____

d) The picture in figure below shows different stages of seed germination.

Stage A   Stage B   Stage C

Stage F   Stage E   Stage D

i. During germination, where does the young plant at the following stage gets its food? [2]

Stage B: _____

Stage E: _____