18) a) The magnification of a concave mirror is – 1. What is the position of the object ?

b) The magnification of a spherical mirror is ± 2. What kind of mirror can it be ? What are the possible positions of the object ?

19) What is the ratio of object distance to image distance in case of a concave mirror when its magnification is 0.5 ?

20) The focal length of a convex mirror is 12.5 cm. How far is its centre of curvature (a) from the pole (b) from the focus ?

21) An object is held at 30 cm in front of a convex mirror of focal length 15 cm. At what distance from the convex mirror should a plane mirror be held so that images in the two mirrors coincide with each other ?

22) Analyse the following observation table showing variation of image distance (v) with object distance (u) in case of a concave mirror and answer the questions that follows, without doing any calculations :

S. No.	Object distance u (cm)	Image distance v (cm)
1	– 90	– 18
2	– 60	– 20
3	– 30	– 30
4	– 20	– 60
5	– 18	– 90
6	– 10	– 100

(a) What is the focal length of the concave mirror? Give reason in support of your answer.

(b) Write the serial number of that observation which is not correct. How did you arrive at this conclusion?

(c) Take an appropriate scale to draw ray diagram for the observation at S. No. 4 and the approximate value of magnification. (Delhi 2017)

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HOLIDAY HOME WORK

CLASS : X **SUBJECT : PHYSICS**

1) A ray of light falls on a plane mirror making an angle of 30^{o} with the mirror. On reflection, the ray deviates through an angle of _____.

a) 30^{o} b) 60^{o} c) 120^{o} d) 180^{o}

2) The focal length of a concave mirror that produces four times larger real image of an object held at 5 cm from the mirror is _____.

a) – 20 cm b) – 4 cm c) 20 cm d) 5 cm

3) A 10 mm long awl pin is placed vertically in front of a concave mirror. A 5 mm logIn image of the awl pin is formed at 30 cm in front of the mirror. The focal length of this mirror is _____.

a) – 30 cm b) – 20 cm c) – 40 cm d) – 60 cm

4) Magnification produced by a rear view mirror fitted in vehicles ___.

a) is less than one b) is more than one

c) is equal to one

d) can be more than or less than one depending upon the position of the object in front of it.

5) Rays from Sun coverage at a point 15 cm in front of a concave mirror. Where should an object be placed so that size of its image is equal to the size of the object ?

a) 15 cm in front of the mirror

b) 30 cm in front of the mirror

c) between 15 cm and 30 cm in front of the mirror

d) more than 30 cm in front of the mirror

6) A full length image of a distant tall building can definitely be seen by using.

a) a concave mirror b) a convex mirror

c) a plane mirror d) both concave as well as plane mirror

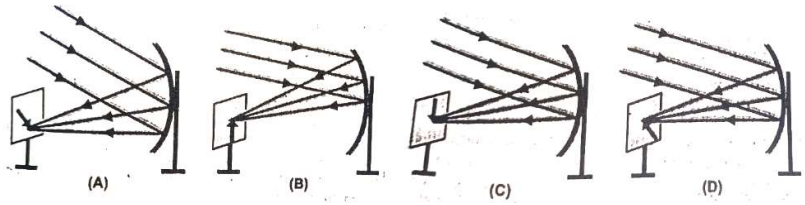
7) In torches, search lights and headlights of vehicles the bulb is placed
a) between the pole and the focus of the reflector
b) very near to the focus of the reflector
c) between the focus and centre of curvature of the reflector
d) at the centre of curvature of the reflector

8) The laws of reflection hold good for _____.
a) plane mirror only
b) concave mirror only
c) convex mirror only
d) all mirrors irrespective of their shape

9) A child is standing in front of a magic mirror. She finds the image of her head bigger, the middle portion of her body of the same size and that of the legs smaller. The following is the order of combinations for the magic mirror from the top.
a) Plane, convex and concave b) Convex, concave and plane
c) Concave, plane and convex d) Convex, plane and concave

10) In an experiment, the image of a distant object formed by a concave mirror is obtained on a screen. To determine the focal length of the mirror, you need to measure the distance between the :
a) mirror and the screen b) mirror and the object
c) object and the screen
d) mirror and the screen and also between the object and the screen

11) Parallel rays from the top of a distant object, incident on a concave mirror form an image on the screen. The diagram correctly showing the image of the object on the screen in fig. is :



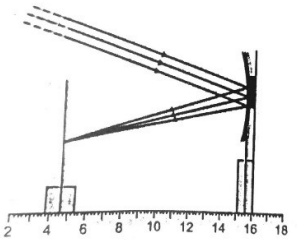
a) A b) B c) C d) D

12) You wish to use a concave mirror of focal length 50 cm as a magnifying glass. Upto what distance can you stand from the mirror ?
a) 50 cm b) 100 cm c) 150 cm d) infinity

13) You have a concave mirror of focal length 10 cm. At what distance from the mirror, should you hold an object to get image of the same size as the object ?
a) 10 cm b) 20 cm c) 30 cm d) 40 cm

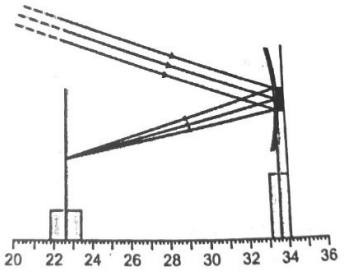
14) A screen is held at a distance of 50 cm infront of a concave mirror of focal length 20 cm. At what range of distances should a candle flame be held from the mirror to obtain its real image on the screen ?
a) 0 – 20 cm b) 20 – 40 cm c) 40 cm d) 50 cm

15) The focal length of the concave mirror in the experimental set up shown, equals :



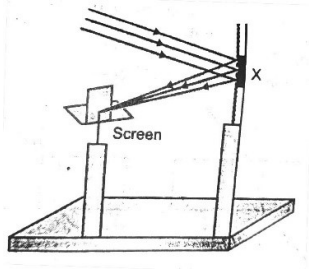
a) 10.3 cm b) 11.0 cm
c) 11.7 cm d) 12.2 cm

16) The focal length of the concave mirror in the experimental set up shown in fig. is _____.



a) 10.2 cm b) 11.0 cm
c) 11.4 cm d) 12.2 cm

17) A student determines the focal length of a device X, by focusing the image of a far off object on the screen positioned as shown in Fig. 4.90. The device X is a _____.



a) convex lens b) concave lens
c) convex mirror d) concave mirror