



Worksheet 19

School: Ba Sangam College

Year/Level: 11

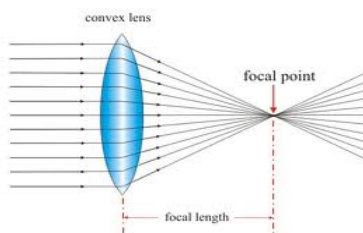
Subject: Physics

| | |
|--------------------------|---|
| Strand | 4 -Light |
| Sub-strand | Refraction |
| Content Learning Outcome | Objective: <ul style="list-style-type: none"> Demonstrate by drawing scaled ray diagrams an understanding of the formation and nature of the images due to concave and convex lens. |

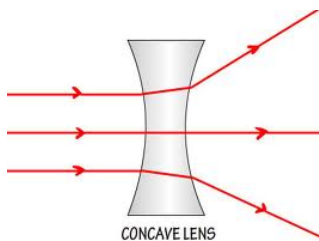
REFRACTION THROUGH LENSES

There are two basic types of lenses:

- Convex or converging lenses: these are thicker at the centre than at the outside.

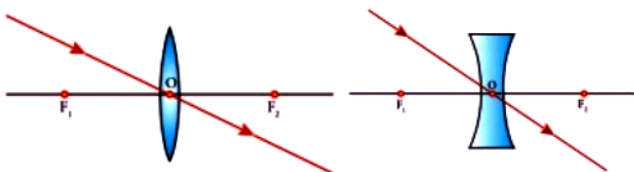


- Concave or diverging lenses: these are thinner at the centre than at the outside.

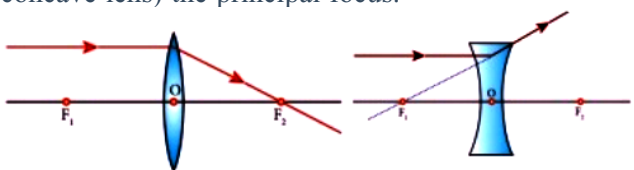


Draw any two rules to locate the image

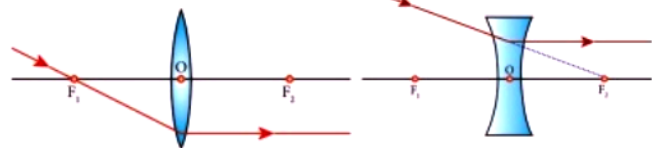
Rule-1: When a ray of light strikes the convex or concave lens obliquely at its optical centre, it continues to follow its path without any deviation.



Rule-2: When rays parallel to the principal axis strikes a convex or concave lens, the refracted rays are converged to (convex lens) or appear to diverge from (concave lens) the principal focus.



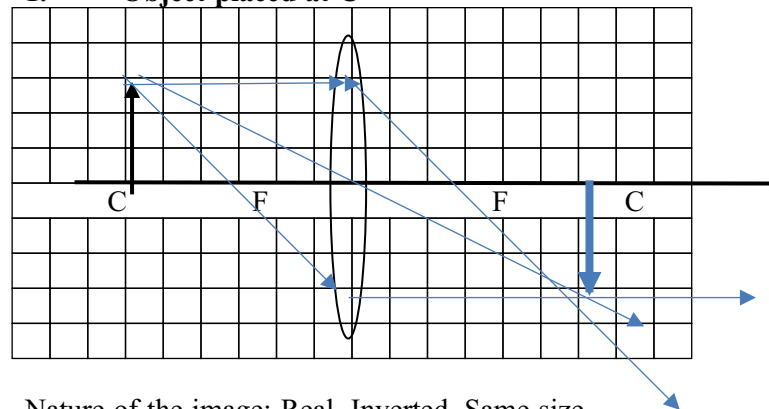
Rule-3: When a ray passing through (convex lens) or directed towards (concave lens) the principal focus strikes a convex or concave lens,



Example

Images Formed by Convex Lens

1. Object placed at C

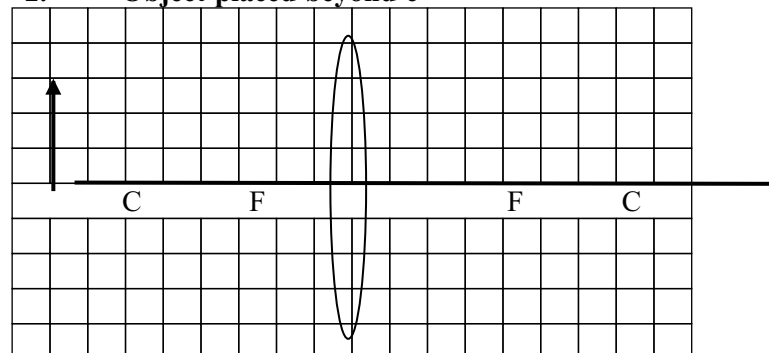


Nature of the image: Real, Inverted, Same size

Activity (2 marks each)

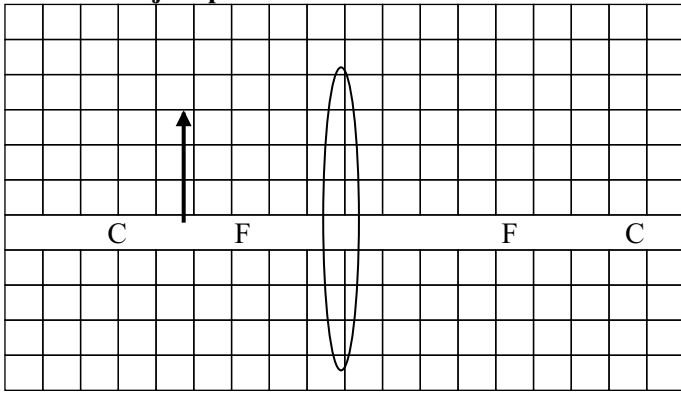
(18 marks)

2. Object placed beyond c



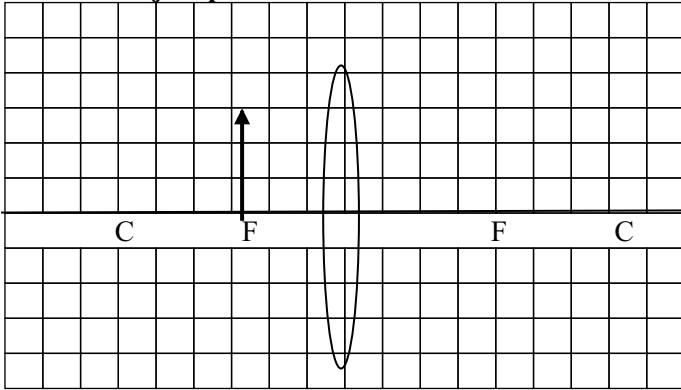
Nature of the image:

3. Object placed between C and F



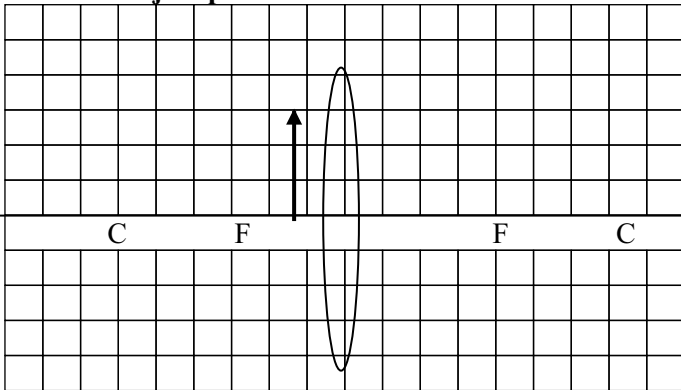
Nature of the image:

4. Object placed at F



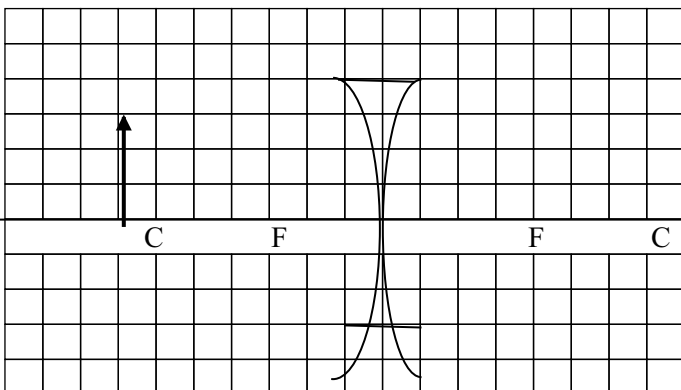
Nature of the image:

5. Object placed between F and lens



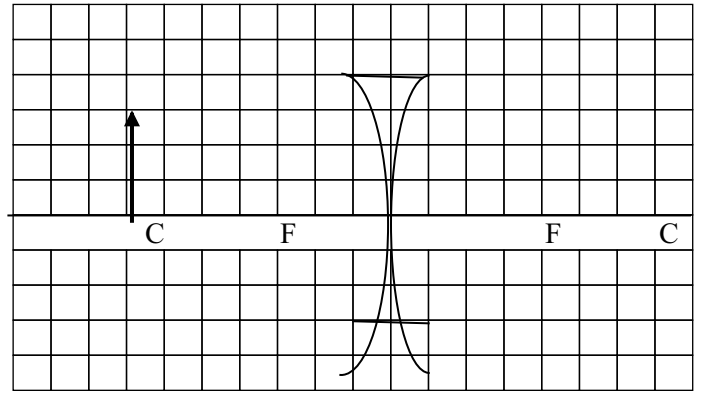
Nature of the image:

6. Object placed beyond C



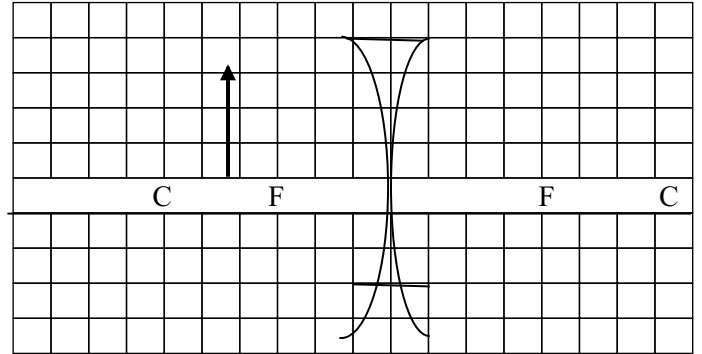
Nature of the image:

7. Object placed at C



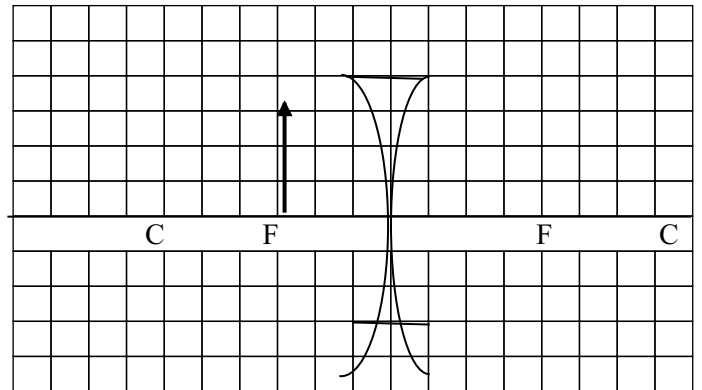
Nature of the image:

8. Object placed between F and C



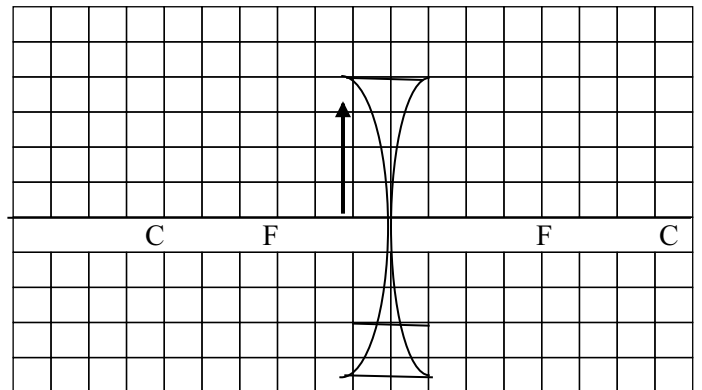
Nature of the image:

9. Object placed at F



Nature of the image:

10. Object placed between F and lens



Nature of the image:

THE END