I. Choose the correct answer: 5x1=5
1. The centrifugal force is _____.
   a) a real force
   b) the force of reaction of centripetal force
   c) a virtual force
   d) directed towards the centre of the circular path.
2. When a beam of white light passes through a prism it gets _____.
   a) reflected   b) only deviated
   c) deviated and dispersed d) refracted
3. The speed of light is maximum in _____.
   a) vacuum   b) glass   c) diamond   d) air
4. The Big Bang occurred _____ years ago.
   a) 13.7 billion   b) 15 million   c) 15 billion   d) 20 million
5. Which of the following is not a part of outer Solar system?
   a) Mercury b) Saturn   c) Uranus   d) Neptune
II. Answer any five of the following: 5x2=10
6. Write a note on the inner planets.
7. Match the following:
   1) Ratio of height of image
        to height of object   -   Total internal reflection
   2) Used in hairpin bends
        in mountains   -   Refraction
   3) Coin inside water appearing
        slightly raised   -   Magnification
   4) Mirage   -   Convex Mirror
                                      -       Concave Mirror
8. Define velocity
9. What is a satellite? What are the two types of satellites?
10. What is the speed of light in vacuum?
11. Calculate the orbital velocity of a satellite orbiting at an
    altitude of 500 Km. (M=5.972 x 10^{24} kg
                G = 6.673 x 10^{-11} SI units
                R = 6371000m
12. Compare speed and velocity.
13. Concave mirrors are used by dentists to examine teeth. Why?
III. Answer any two of the following in detail: 2x5=10
14. Explain with diagram how refraction of incident light
    takes place:
    a) from rarer to denser medium
    b) from denser to rarer medium
    c) from normal to the surface separating the two media.
15. Explain different types of motion.
16. Discuss the benefits of ISS.

I. Choose the correct answer: 6x½=3
1. Which of the following is observed to commemorate the Hay
   Market Massacre?
   a) Independence Day   b) Farmers Day
   c) Labour Day   d) Martyrs Day
2. What was the invention that removed seeds from cotton?
   a) Rolling Mill   b) Cotton Gin
   c) Spinning Mule   d) Spinning Jenny
3. 'Drop, Cover, Hold' is a mock drill a vowal for _____.
   a) fire   b) earthquake   c) Tsunami   d) riot
4. When you happen to see a fire breakout, you will make a
   call to _____.
   a) 114   b) 112   c) 115   d) 118
5. _____ has recorded the maximum number of emigrants.
   a) Ramanathapuram   b) Coimbatore
   c) Chennai   d) Vellore
6. During 2015, _____ of illiterates were migrants from TamilNadu
   a) 7%   b) 175%   c) 23%   d) 9%
II. Fill in the blanks: 2x1=2
7. _____ advocated scientific female migration.
8. _____ is the major reason for female migration.
III. Match the following: 4x½=2
9. Safety lamp   - To reduce the volume of migration
10. Benz   - Work
11. Migration Policy - Humphrey Davy
12. Male Migrants   - Germany
                      - England
IV. Give short answers: 4x1½=6
13. What do you know of Louis Renault?
14. Highlight any two important results of Industrial Revolution.
15. Who are the community's first responders to disaster?

I. Choose the correct answer: 6x1=6

1. Where was Zollverein customs union formed?
   a) England   b) Germany   c) France   d) America
2. Who established the first steam boat service?
   a) Arkwright   b) Samuel Crompton
   c) Robert Fulton   d) James Wats
3. When you happen to see a fire break out, you will make
   a call to _____.
   a) 114   b) 112   c) 115   d) 118
4. Drop, cover, hold is a mock drill a vowal for _____.
   a) fire   b) earthquake   c) Tsunami   d) Riot
5. According to the 2011 census, the total population of India
   was _____.
   a) 121 crore   b) 221 crore   c) 102 crore   d) 100 crore
6. During 2015, _____ of illiterates were migrants from
   Tamilnadu.
   a) 7%   b) 175%   c) 23%   d) 9%

II. Fill in the blanks: 2x1=2

7. _____ is the major reason for female migration.
8. _____ changed the way roads were built around the
   world.

III. Match the following: 4x½=2

9. Benz   -   Low incidence of migration
10. Great Rail Road   -   Work
11. Male Migrants   -   U.S.A
12. Salem   -   Germany

IV. Answer the following in brief: 4x1½=6

13. Enlist the reason for migration.
14. What does the study reveal about the occupation
    undertaken by migrants?
15. List the four destinations and the percentage of migrants
    from Tamilnadu.
16. What should you do after a Tsunami?
17. What are the four phases of the disaster management cycle?
18. How many males and females die per day due to fire in India?

16. What are the four phases of the Disaster Management Cycle?
17. What should you do after a Tsunami?
18. Name four districts in Tamil Nadu which record low number
    of immigration.
19. List the four destinations and the percentage of migrants
    from Tamil Nadu.
20. What does the study reveal about the occupation
    undertaken by migrants?

V. Answer the following caption: 4x1=4

21. Transportation and communication
    a) Which was the first railway line opened in England?
    b) How were the produced goods transported to markets?
    c) How was the steam boat invented in the US called?
    d) Who sailed from New York to Albany?

VI. Answer any one of the following: 1x5=5

22. Enumerate the causes for the second industrialization
    in the USA.
23. What do you do if you are indoors during an earthquake?
24. Analyse the educational qualification of migrants from
    Tamil Nadu in 2015.

VIII. Mark any three of the following in the outline map of the
    world.
    a) England   b) France   c) Denmark   d) China
    e) Palk Bay

19. Attempt a note on Haymarket massacre.
20. What do you know of Louis Renault?

V. Answer the following caption: 1x2=2
21. Labour Movement
   a) When was the reform Bill introduced?
   b) To whom did it grant voting right?
   c) Why it was known as chartism?
   d) What were the demands of the chartists?

VI. Mark any four of the following locations in given map: 4x½=2
22. a) River Hwang Ho
   b) Palk Bay
   c) An area of High density population
   d) An area of Low density population
   e) France
   f) England

VII. Answer in a paragraph: 1x5=5
23. Describe the patterns of rural settlement.
24. Enumerate the causes for the second industrialization
    in the USA.
25. State the aims of migration policies.

I. Multiple choice questions: 5x1=5
1. The bending of root of a plant in response to water is
   called _____.
   a) Thigmonasty   b) Phototropism
   c) Hydrotropism   d) Photonasty
2. _____ is positively hydrotropic as well as positively geotropic.
   a) Root   b) Stem   c) Leaves   d) Flowers
3. The sprouting of onion and potatoes can be delayed by the
   process of _____.
   a) freezing   b) irradiation   c) salting   d) canning
4. The physician who discovered that scurvy can be cured by
   ingestion of citrus fruits is _____.
   a) James Lind   b) Louis Pasteur
   c) Charles Darwin   d) Issac Newton
5. _____ is called as sunshine vitamin.
   a) Vitamin-A   b) Vitamin-D   c) Vitamin-E d) Vitamin-K

II. Answer any five of the following: 5x2=10
1. Give abbreviations for the following:
   a) FSSAI   b) FPO
2. Why salt is added as a preservative in pickles?
3. Name any two naturally occurring toxic substances in food.
4. Differentiate macronutrients from micronutrients.
5. What is nastic movement?
6. Photosynthesis converts energy X into energy Y.
   a) What are X and Y?
   b) Green plants are autotrophic in their mode of nutrition.
      Why?
7. Give technical terms for the following:
   a) Growth dependent movement in plants.
   b) Growth independent movement in plants.
8. Explain the movement seen in pnematophores of Avicennia.

III. Answer any two of the following: 2x5=10
1. Explain the different types of transpiration.
2. Explain the role of food control agencies in India.
3. How are vitamins useful to us. Tabulate the sources,
   deficiency diseases and symptoms of fat soluble vitamins.