SCIENCE QUESTION BANK
LESSON 1: LAWS OF MOTION

TIME: 1hr 30mins **10TH – STD** **Max. MARKS: 50**

I. Choose the correct answer: **8x1=8**

1. Inertia of a body depends on
   (a) weight of the object (b) acceleration due to gravity of the planet
   (c) mass of the object (d) Both a & b
2. Newton's III law is applicable
   (a) for a body is at rest (b) for a body in motion
   (c) both a and b (d) only for bodies with equal masses
3. In which of the following sport the turning of effect of the force used.
   (a) Swimming (b) tennis (c) cycling (d) hockey
4. One Kilogram force equals to
   (a) 9.8 dyne (b) $9.8 \times 10^4 N$ (c) $98 \times 10^4\ dyne$ (d) 980 dyne
5. Impulse is equals to
   (a) rate of change of momentum (b) rate of force and time
   (c) Change of momentum (d) rate of change of mass
6. To project the rockets which of the following principle(s) is / (are) required?
   (a) Newton's third law of motion (b) Newton's law of gravitation
   (c) Law of conservation of linear momentum (d) both a and c
7. The force required to produce on acceleration of 1 $cm\ s^{-2}$ on a body mass 1 g is
   (a) 1N (b) 10 N (c) $10^2 dyne$ (d) $1\ dyne$
8. Force = 40N, distances of object = 90 cm. Then moment of force will be
   (a) 3.6 Nm (b) 36 Nm (c) 0.36 Nm (d) 3600 Nm

II. Answer any six questions: Question no:16 is compulsory: **6x2=12**

9. Define inertia. Give its classification.
10. Name the law of motion used in flying of birds. Give another example for the same law.
11. Classify the types of force based on their application.
12. Define moment of couple.
13. State the universal law of gravitation.
14. Write short note on gears.
15. How does an astronaut float in a space shuttle?
16. Calculate the velocity of a moving body of mass 5 kg whose linear momentum is 2.5 $kgms^{-1}$

III. Answer any four questions: Question no:21 is compulsory: **4x4=16**

17. Differentiate Mass and weight.
18. Give the application of universal law of gravitation?
19. State Newton's law of motion.
20. Deduce the equation of force using Newton's second of law of motion.
21. Two blocks of masses 8 kg and 2 kg respectively lie on a smooth horizontal surface in contact with one another. They are pushed by a horizontally applied force of 15N. Calculate the force exerted on the 2 kg of mass.

IV. Answer all questions: **2x7=14**

22. (a) (i) State Newton's II^{nd} law. (ii) Describe rocket proposition.

(OR)

(b) (i) To produce a displacement _____ is required.
(ii) Sate and prove the law of conservation of linear momentum.

23. (a) (i) State principle of moments.
(ii) What are the types of inertia. Give an example for each type.

(OR)

(b) (i) What are the principle is used for to project the rocket.
(ii) State the universal law of gravitation and derive its mathematical expression.

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SCIENCE QUESTION BANK
LESSON 2: OPTICS

TIME: 1hr 30mins **10TH – STD** **Max. MARKS: 50**

I. Choose the correct answer: **8× 1 = 8**

1. Where should on object be placed so that a real and inverted image of same size is obtained by a convex lens.
   (a) f (b) 2f (c) infinity (d) between f and 2f
2. Magnification of a convex lens is
   (a) positive (b) negative (c) either positive or negative (d) zero
3. Power of a lens is -4D, then its focal length is
   (a) 4 m (b) -40 m (c) -0.25 m (d) -2.5 m
4. The eye defect 'presbyopia 'can be corrected by
   (a) convex lens (b) concave lens (c) convex mirror (d) Bifocal lenses
5. A convex lens forms a real, diminished point sized image at focus. Then the position of the object is at
   (a) focus (b) infinity (c) at 2f (d) between f and 2f
6. In a myopic eye, the image of the object is formed.
   (a) behind the retina (b) on the retina (c) Infront of the retina (d) on the blind spot
7. Amount of light entering into the eye is controlled by
   (a) Pupil (b) Iris (c) Retina (d) Eye lens
8. Which lens is used for microscope and slide projectors.
   (a) Concave (b) Convex (c) cylindrical (d) none

II. Answer any six questions: Question no:16 is compulsory: **6× 2 = 12**

9. What is refractive index.
10. Draw a ray diagram to show the image formed by convex when the object is placed between F and 2F.
11. What are the causes of myopia.
12. Write the uses of concave lens.
13. Why are traffic signals red in *colour*?
14. What are the uses of simple microscope?
15. Differentiate concave and convex lens.
16. The power of a lens is-2D. Find the focal length of a lens.

III. Answer any four questions: Question no:21 is compulsory: **4× 4 = 16**

17. List any four properties of light
18. (i) Sate Snell's law. (ii) Define refractive index.
19. Differentiate the eye defects. (i) Myopic and Hyper meropia
20. Draw the structure of human eye and label its parts.
21. A beam of light passing through a diverting lens of focal length 0.3 m appears to be focused at a distance 0.2m behind the lens. Find the position the object

IV. Answer the following questions: **2 × 7 = 14**

22. (a) (i) Why does the sky appear in blue *colour*
    (ii) Explain the rules for obtaining images formed by a convex lens for obtaining images formed by a convex lens with help of a ray diagram.

(OR)

(b) (i) Define dispersion of light.
(ii) State Rayleigh's law of scattering.
(iii) Write any two advantages of telescope.

23. (a) Explain the construction and working of a compound microscope.

(OR)

(b) (i) What are the uses of convex lens.
(ii) Describe the working of a human eye.
(iii) The eyes of the natural birds like owl are barring a large cornea and a large pupil. How does it help them?

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10th SCIENCE

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1. Chapterwise question paper – 23
2. Public model question paper – 5
3. Govt. public exam question paper – 5
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Prepared by: **P.PUVANESWARA, M.Sc., B.Ed., M.Phil.,**

Proprietor **G. MAHALAKSHMI, M.Sc., B.Ed.,**

OM MURUGA PUBLICATION

+91 9663737998, +91 9384845512, +91 9788519850

50/31, Bazaar II, Velayuthampalayam, Karur D.t - 639117

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