

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI-600086
(For candidates admitted during the academic year 2019-2020 & thereafter)

SUBJECT CODE : 19PH/PE/EP23
M.A./M.Sc./M.Com. DEGREE EXAMINATION - APRIL 2022
PHYSICS
SECOND SEMESTER

COURSE : ELECTIVE
PAPER : ENERGY PHYSICS
TIME : 3 HOURS

MAX. MARKS : 100

SECTION – A

ANSWER ALL THE QUESTIONS:

(10 x 3 = 30)

1. State any three disadvantages of wind energy.
2. Define solar constant.
3. What do you mean by tidal energy?
4. State the law of conservation of energy.
5. Mention the different sources and forms of energy.
6. Explain the nuclear fission reaction.
7. Describe the efficiency of a solar cell.
8. Write about the constituents of biogas.
9. Contrast the merits and demerits of nuclear energy.
10. What is natural gas? Mention its composition.

SECTION – B

ANSWER ANY FIVE QUESTIONS:

(5 x 5 = 25)

11. Differentiate between conventional and non-conventional energy sources.
12. What is biomass? Explain the biomass conversion process.
13. i) A 1000 kg car is moving at a velocity of 60 km/hr. What is its kinetic energy?
ii) Convert 1W.yr to MJ.
14. What do you think about the alternate sources of energy? Discuss the measures that can be taken to develop sustainable energy in India.
15. Write short notes on
 - i) Fossil fuels
 - ii) Measures to conserve energy and energy consumption
16. Enumerate the different applications of solar energy.
17. Discuss about electrical energy and its effects. Mention the units of electrical energy,

SECTION – C

ANSWER ANY THREE QUESTIONS:

(3x 15 = 45)

18. Give detailed explanation on the construction and working of a biogas plant.
19. Describe the basic principle of wind energy conversion systems. Give the advantages and disadvantages of wind energy conversion.
20. Define Energy audit. Summarize on the process of energy audit and its types.
21. What are called as nuclear power reactors? Explain the components and working of nuclear power plants.
22. i) How will you calculate average solar radiation. Give expression and its explanation.
ii) What is coal? Give the classifications of coal.
