

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI- 86
(For candidates admitted during the academic year 2016–17)

SUBJECT CODE : 16VS/VM/BB46

B. Voc. DEGREE EXAMINATION, APRIL 2019
SUSTAINABLE ENERGY MANAGEMENT
FOURTH SEMESTER

COURSE : MAJORCORE

PAPER : BIOFUEL CROPS AND BIOFUELS(THEORY)

TIME : 6 HOURS

MAX. MARKS : 100

(Theory: 50marks +Practical: 50 marks)

SECTION – A

ANSWER ALL QUESTIONS

(20x1 = 20)

I. Choose the correct Answer:

1. Calorific value of biodiesel
 - a. 37 MJ/Kg
 - b. 37 KJ/Kg
 - c. 3.7 J/Kg
 - d. 3.7 MJ/Kg
2. The temperature at which the crystal in biodiesel is visible
 - a. Cloud point
 - b. visible point
 - c. bio point
 - d. crystal point
3. Unit for Viscosity
 - a. Kg m s^{-1}
 - b. $\text{Kg m}^{-1} \text{S}^{-1}$
 - c. viscous
 - d. m s^{-1}
4. By product of biodiesel is
 - a. Petrol
 - b. Glycerine
 - c. Ethylene Glycol
 - d. LPG
5. Pensky Marten apparatus is used to determine
 - a. Pressure
 - b. Temperature
 - c. flash point
 - d. viscosity

II. Fill in the Blanks:

6. _____ is used to remove gaseous pollutants.
7. Cetane number indicates _____ value.
8. To make transport fuel the bio ethanol is blended with _____.
9. The third generation biofuels are derived from _____.
10. The fuels extracted from Non - Arable cultivation lands are _____.

III. State whether true or false:

11. Saponification is the characteristics of vegetable oil.
12. Parthenium, Jatropha are examples of petroplants.
13. Is bacteria spread method is one of method of scrubbers.
14. Transesterification is also called alcholysis.
15. Bleaching is a process to remove color from the oil.
16. Biomass is a renewable energy source that can directly reduce our dependence on liquid fossil fuels.

IV. Answer in a sentence or two:

17. Expand FAME.
18. Define Viscosity.
19. Define biomass.
20. What is the use of biodiesel?

SECTION – B**Answer any SIX questions:****(6x3=18)**

21. Classify the biofuel crops according to the end product.
22. Write a note on Energy plantation.
23. Write a note on Thermochemical Biomass Conversion Processes.
24. What are scrubbers? Where is it used?
25. Give the Characteristics of vegetable oil.
26. What are the parameters used to test a biofuel.
27. Explain the different types of biodiesel production processes.
28. What is the By product in the production of biodiesel? Write down its characterization.
29. Write a note on third generation biofuels with examples.
30. What are the various technologies available to produce Bioethanol?

SECTION – C**Answer any TWO questions:****(2x6=12)**

31. Write a detailed note on energy scenario, policy issues and importance of vegetable oil based biodiesel.
32. Elucidate the various Biomass densification processes.
33. Give a detailed pictures of the parameters used Testing of biodiesel.
34. Explain the production of biodiesel from algae and mention its merits and demerits.
