

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – 3 • EXAMINATION – WINTER - 2017

Subject Code: 3330204

Date: 15-11-2017

Subject Name: Fuels and Lubricants

Time: 10:30 am to 01:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** Answer any seven out of ten. **14**
1. Draw line diagram of earth strata, where crude petroleum located?
 2. Draw molecular structure of (1) Benzene (2) Xylene
 3. List out the various additives of gasoline.
 4. Write the general molecular formula for paraffin and olefins series.
 5. What is Pre-ignition?
 6. Write down the advantages of CNG.
 7. Define Flash point and Fire point.
 8. Name two instrument used to measure of viscosity of lubricating oil.
 9. What is Biodiesel?
 10. List the different types of grease.
- Q.2** (a) Explain the classification of crude oil. **03**
- OR
- (a) List the methods of searching crude petroleum and explain any one. **03**
- (b) List out the different additives for diesel. **03**
- OR
- (b) Explain polymerization? **03**
- (c) Explain the blending of gasoline. **04**
- OR
- (c) Explain "Fractional distillation process." **04**
- (d) List out the important properties of gasoline and explain any one. **04**
- OR
- (d) Write short note in saturated and unsaturated hydrocarbons. **04**
- Q.3** (a) Explain cetane number. **03**
- OR
- (a) What is delay period in diesel engine? **03**
- (b) What is the effect of detonation on engine performance? **03**
- OR
- (b) Write short note on API and SAE gradation. **03**
- (c) Write down the difference between pre-ignition and diesel knock. **04**
- OR
- (c) Explain combustion process in SI engine. **04**
- (d) Difference between normal combustion and abnormal combustion. **04**
- OR
- (d) Explain combustion process in CI engine. **04**
- Q.4** (a) Explain H₂ (Hydrogen) - as automobile fuel. **03**

- OR
- (a) Explain solvent extraction of lubricating oil. **03**
(b) Describe the fuel cell with neat sketch. **04**
- OR
- (b) Comparison of characteristics of CNG, LPG and Gasoline. **04**
(c) Explain Red wood viscometer with neat sketch. **07**
- Q.5** (a) State various function of lubricating oil. **04**
(b) Explain any two characteristics of grease. **04**
(c) Explain demerits of LPG Fuel. **03**
(d) Explain cloud and pour point. **03**

GTUQuestionPapers.com