

CHEMISTRY

OBJECTIVE QUESTIONS ON EXPERIMENT (CY110)

CHAPTER 1

AIM-To determines the Viscosity of given oil sample using Redwood viscometer no. 1/ no.2.

AIM-To determines the effect of temperature on the Viscosity of given oil sample using Redwood viscometer no. 1/ no.2.

Q.1.The single most important property of lubricating oil is its:-

- a) Fire point b) cloud point c) oiliness d) viscosity index

Ans. d) viscosity index.

Q.2.Unit of viscosity is:-

- a) Poise b) $\text{JK}^{-1}\text{m}^{-1}$ c) kgm^{-1} d) none of these.

Ans. a) Poise

Q.3. viscosity of high-viscous oils must be determined by apparatus Redwood viscometer no.

- a) 1 b) 2 c) 3 d) none

Ans. b) 2

Q.4. Graphite is _____ lubricant.

- a) Solid b) Liquid c) Semi solid d) None of above

Ans. a) Solid

Q.5. Animal and vegetable oils possess,

- a) Good oiliness b) Poor oiliness c) Optimum oiliness d) None of above.

Ans. a) Good oiliness

Q.6 Low viscosity standard oil is,

- a) Petroleum oil b) Gulf oil c) Blended oil d) Mineral oil

Ans. b) Gulf oil

Ans. d) unit less.

Q.15. Standard Paraffinic base lubricating oil has viscosity index -----

- a) 0 b) 100 c) 1000 d) 450

Ans. b) 100

Q.16. Standard Naphthenic base lubricating oil has viscosity index -----

- a) 0 b) 100 c) 1000 d) 450

Ans. b) 0

Q.17. Lubricating oils with small variation in viscosity with temperature have viscosity index—

- a) High b) Low c) Moderate d) Any

Ans. a) High

Q.18. Viscosity of lubricating oil can be determined using...

- a) Redwood viscometer b) Say bolt viscometer c) Engler viscometer d) all

Ans. d) all

CHAPTER 2

AIM-To find flash & fire point of given oil sample by Abel's Apparatus / Cleveland Apparatus / Pensky Martin Apparatus.

Q.1. Apparatus used to determine flash and fire points of lubricating oil is known as-

- a) Bomb calorimeter b) Spectrophotometer c) Redwood viscometer d) Pensky Martin Apparatus

Ans. d) Pensky Martin Apparatus

Q.2. Flash and Fire points of lubricating oil is determined BY-

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. d) All

Q.3. The lowest temperature at which the lubricating oil gives off enough vapours, they ignite for a moment, When a tiny flame is brought near it is called-----

- a) Flash point b) Fire point c) cloud point d) viscosity index.

Ans. a) Flash point

Q.4. The lowest temperature at which the lubricating oil gives off enough vapours, they ignite for at least 5 seconds, When a tiny flame is brought near it is called-----

- a) Flash point b) Fire point c) cloud point d) viscosity index.

Ans. a) Fire point

Q.5. What factor will affect the Flash and Fire points of lubricating oil-

- a) Moisture b) vapour pressure of oil c) volatile organic compounds d) All

Ans. d) All

Q.6. Abel's Apparatus is used to determine.....

- a) Flash and Fire points of lubricating oil b) cloud & pour point of lubricating oil
c) Viscosity index of lubricating oil d) Aniline point

Ans. a) Flash and Fire points of lubricating oil

Q.7. Which Apparatus is used to determine the Flash point of lubricating oil above 120°F-----

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. a) Pensky Martin Apparatus

Q.8. Flash point open is determined by----

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. b) Cleveland Apparatus

Q.9. Flash point closed is determined by----

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) a & c

Ans. d) a & c

Q.10. For safe use, Flash and Fire points of lubricating oil should be

- a) High b) Low c) moderate d) any

Ans. a) High

Q.11. To determine the Flash and Fire points of lubricating oil, in which apparatus, oil is heated through Air jacket-----

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. a) Pensky Martin Apparatus

Q.12. To determine the Flash and Fire points of lubricating oil, in which apparatus oil is heated through water jacket-----

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. c) Abel's Apparatus

Q.13. To determine the Flash and Fire points of lubricating oil, in which apparatus oil is heated directly -----

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. b) Cleveland Apparatus

Q.14. Which Apparatus gives more reliable Flash point---

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. a) Pensky Martin Apparatus

Q.15. Irregular flashes observed below the true Flash point of lubricating oil are called ----

- a) Flash point b) Fire point c) cloud point d) Freaky Flash point .

Ans. d) Freaky Flash point

Q.16. The flash & fire point of petroleum product is determined by

- a) Pensky Martin Apparatus b) Cleveland Apparatus c) Abel's Apparatus d) All

Ans. b) Cleveland Apparatus

CHAPTER 3

AIM: To determine the type and extent of alkalinity of water sample in mg/l by neutralization titration against n/50 H₂SO₄ solution using phenolphthalein and methyl orange as internal indicators.

Q.1. Water is alkaline due to presence of----

- a) OH⁻ b) CO₃²⁻ c) HCO₃⁻ d) All

Ans. d) AllQ.2 In titration of alkaline water with acid the colour of solution changes for phenolphthalein end point is

- a) wine red to blue b) colorless to pink c) blue to white d) pink to colorless

Ans. d) pink to colorless

Q.3 In titration of alkaline water with acid the colour of solution changes for methyl orange end point is-

- a)) wine red to blue b) orange to pink c) blue to white d) pink to colorless

Ans. b) orange to pink

Q.4 which combination is not possible in alkaline water-----

- a) $\text{OH}^- + \text{CO}_3^{2-}$ b) $\text{CO}_3^{2-} + \text{HCO}_3^-$ c) $\text{HCO}_3^- + \text{OH}^-$ d) OH^-

Ans. c) $\text{HCO}_3^- + \text{OH}^-$

Q.5 If $P > 1/2 M$ for alkaline water, the alkalinity is due to-----

- a) OH^- & CO_3^{2-} b) CO_3^{2-} c) HCO_3^- d) All

Ans. a) OH^- & CO_3^{2-}

Q.6 If $P < 1/2 M$ for alkaline water, the alkalinity is due to-----

- a) OH^- & CO_3^{2-} b) CO_3^{2-} & HCO_3^- c) HCO_3^- d) All

Ans. b) CO_3^{2-} & HCO_3^-

Q.7 If $P = 1/2 M$ for alkaline water, the alkalinity is due to ----

- a) OH^- & CO_3^{2-} b) CO_3^{2-} c) HCO_3^- d) All

Ans. b) CO_3^{2-}

Q.8 If $P = 0$ for alkaline water, the alkalinity is due to ----

- a) OH^- & CO_3^{2-} b) CO_3^{2-} c) HCO_3^- d) All

Ans. c) HCO_3^-

Q.9 If $P = M$ for alkaline water, the alkalinity is due to ----

- a) OH^- b) CO_3^{2-} c) HCO_3^- d) All

Ans. a) OH^-

Q.10 To determine the alkalinity of water, its titrated with-----

- a) Acid b) EDTA c) FAS d) NaOH

Ans. a) Acid

CHAPTER 4

AIM: To determine Aniline point of given lubricating oil.

Q.1. The minimum equilibrium solution temperature for equal volume of aniline and oil sample is known as----

- a) Aniline point b) cloud and pour point c) flash point d) fire point

Ans. a) Aniline point

Q.2. A lower Aniline point of an oil means ---

- a) Lower % of aromatic hydrocarbons
b) Higher % of aromatic hydrocarbons
c) Moderate % of aromatic hydrocarbons
d) None

Ans. b) higher % of aromatic hydrocarbons

Q.3. A good lubricating oil should contain----- aromatic content and ----- Aniline point.

- a) High, low b) Low, High c) Moderate d) None

Ans. b) Low, High

Q.4. A lubricating oil 'A' has aniline point 'x' and another lubricating oil 'B' has aniline point 'y'. If $x > y$, then which oil is better?

- a) oil 'A' b) oil 'B' c) both oils d) none.

Ans. a) oil 'A'

Q. 5. Aniline should not be sucked with pipette by mouth because it is-----

- a) Oily b) soapy c) poisonous d) hot.

Ans. c) poisonous

Q. 6. A dry apparatus is used for aniline point determination, why?

- a) Aniline is water soluble b) Aniline reacts with water c) Aniline is hygroscopic d) none.

Ans. c) Aniline is hygroscopic

Q. 7. A higher Aniline point of an oil means ---

- a) Lower % of paraffinic hydrocarbons
- b) Higher % of paraffinic hydrocarbons
- c) Moderate % of paraffinic hydrocarbons
- d) All

Ans. b) Higher % of paraffinic hydrocarbons

Q. 8. Aniline point is determined by mixing the oil with,

- a) Water
- b) Steam
- c) Aniline
- d) Carbon

Ans. c) Aniline

Q. 9. Aromatic hydrocarbons has tendency to dissolve.....,

- a) Natural rubber
- b) synthetic rubber
- c) Both
- d) none

Ans. c) Both

Q. 10. The mixture of Aniline and Oil is heated through.....

- a) Water Bath
- b) Oil Bath
- c) Air Jacket
- d) All

Ans. b) Oil Bath

Q. 11. Before using aniline is kept in contact with -----

- a) NaOH
- b) KOH
- c) H₂O
- d) HCl

Ans. b) KOH

Q. 12. Before using aniline in experiment it is kept in contact with potassium hydroxide to get it-----

- a) Dry
- b) react
- c) mix
- d) all

Ans. a) Dry

Q. 13. Before using lubricating oil to determine the aniline point it is kept for some time with anhydrous sodium sulphate to get it-----

- a) Dry b) react c) mix d) all Ans. a) Dry

CHAPTER 5

AIM: To determine the Steam emulsification number given lubricating oil.

Q. 1. Emulsion is mixture of oil with.....,

- a) Water b) grease c) Both d) NaOH

Ans. a) Water

Q. 2. The tendency of lubricant –Water emulsion to break is determined by,

- a) A.S.T.M. test b) Carbon residue c) Flash point d) fire point

Ans. a) A.S.T.M. test

Q. 3. The time in seconds in which oil and water emulsion separate out in distinct layer is called.....,

- a) Aniline point b) Cloud Point c) pour point d) Steam emulsification number

Ans. d) Steam emulsification number

Q. 4. Full form of A.S.T.M. test is,

- a) American society for testing materials
b) African society for testing materials
c) Asian society for testing materials
d) None of These

Ans. a) American society for testing materials

Q. 5. The property by virtue of which an oil gets mixed with water to form an emulsion is known as-----

- a) Viscosity b) emulsification c) demulsification d) viscosity index

Ans. b) emulsification

Q.6.The ability of lubricating oil to separate from water is called.....,

- a) Demulsibility b) emulsification c) Viscosity d) None

Ans. a) Demulsibility

Q.7.The oil that separates readily from water has.....demulsibility.

- a) Good b) bad c) Moderate d) Poor

Ans. a) Good

Q.8.The time in seconds in which oil and water emulsion separate out in distinct layer is called.....

- a) Steam emulsification number b) demulsification number.
c) Both a & b d) none

Ans. c) Both a & b

Q.9. A good lubricant should have a -----SEN.

- a)High b) Low c) moderate d) allx

Ans. b) Low

Q.10. To avoid corrosion of polished steel surface following is important.

- a) Steam emulsion no. b) Viscosity index c) Flash And fire point d) All*

Ans. a) Steam emulsion no.

CHAPTER 6

AIM: To Determine the chloride content of a water sample by Mohr's Method. (Argentometric method)

Q.1. The amount of chloride in water sample is estimated by titrating it with Standard solution of.....

- a) N/50 AgNO₃ b) N/50 Hypo c) N/50 HCL d) N/50 H₂SO₄

Ans. a) N/50 AgNO₃

Q.2. In Mohr's Method the indicator used is.....,

- a) Phenolphthalein b) Methyl Orange c) EB-T d) K₂CrO₄

Ans. d) K₂CrO₄

Q.3. In the estimation of chloride in the water sample by argentometric titration method the end point is.....,

- a) White ppt b) red ppt c) yellow ppt d) none

Ans. b) red ppt

Q.4. In the estimation of chloride in the water sample by argentometric titration method..... Solution is added through burette.

- a) N/50 AgNO₃ b) N/50 Hypo c) N/50 HCL d) N/50 H₂SO₄

Ans. a) N/50 AgNO₃

Q.5. In the estimation of chloride in the water sample by argentometric titration method the end point is reddish brown due to the formation of.....,

- a) K₂CrO₄ b) AgCl c) Ag₂CrO₄ d) AgNO₃

Ans. c) Ag₂CrO₄

Q.6. In the estimation of chloride in the water sample by argentometric titration method, The strength of chloride ion calculated by.....,

- a) Strength of Cl^- ion = $7.1 \times$ Volume of AgNO_3 Solution required
b) Strength of Cl^- ion = $7.1 \times$ Normality of AgNO_3
c) Strength of Cl^- ion = 7.1×1000
d) All

Ans. a) Strength of Cl^- ion = $7.1 \times$ Volume of AgNO_3 Solution required

Q.7. The Silver Nitrate solution should be kept in.....,

- a) In Dark bottle b) In Ice c) In Burette d) In All

Ans. a) In Dark bottle

Q.8. The Chemical formula of Potassium Chromate is.....,

- a) K_2CrO_4 b) AgCl c) Ag_2CrO_4 d) AgNO_3

Ans. a) K_2CrO_4

Q.9 In the estimation of chloride in the water sample by argentometric titration method, AgCl is pptd first due to its lower

- a) Solubility b) solubility product c) ionic product d) All

Ans. a) solubility product

Q.10. Equivalent mass of chloride ion is,

- a) 35 b) 35.5 c) 7.1 d) 71

Ans. a) 35.5

CHAPTER 7

AIM: To Determine the Cloud and Pour point of lubricating oil using Cloud and Pour point apparatus.

Q.1. When petroleum oil is cooled under specified condition, the temperature at which the oil becomes hazy is called

- a) Cloud point b) pour point c) Flash point d) Fire point

Ans. a) cloud point

Q2. When petroleum oil is cooled under specified condition, the temperature at which the oil ceases to flow is called.....,

- a) Cloud point b) pour point c) Flash point d) Fire point

Ans. b) pour point

Q3. Which oil shows no cloud point?

- a) Naphthenic type b) Paraffinic type c) Both d) None

Ans. a) Naphthenic type

Q.4. Naphthenic type of oil shows no cloud point because it is.....

- a) Wax free b) Thick c) Thin d) All

Ans. a) Wax free

Q.5. Cloud & pour point indicates the suitability of lubricants in.....

- a) Hot conditions b) Cold conditions c) Moderate conditions d) all

Ans. b) Cold conditions

Q.6. An oil with low pour point should be selected for the machine working attemperature.

- a) Low b) High c) Moderate d) All

Ans. a) Low

Q.7. The lowest temperature at which a diesel fuel is still sufficiently fluid to be pumped or transferred, can be determined by.....

- a) Cloud point b) pour point c) Flash point d) Fire point

Ans. b) pour point

Q.8. Lubricant used in working at low temperature should possess.....

- a) Low pour point b) High pour point c) Moderate pour point d) All

Ans. a) Low pour point

Q.9. The freezing mixture contains

- a) Ice + NaCl b) Ice + CaCl₂ c) only Ice d) a & b both

Ans. d) a & b both

Q.10. A suitable lubricant for watches is.....

- a) Grease b) graphite c) hazel-nut oil d) palm oil

Ans. c) hazel-nut oil

CHAPTER 8

AIM: To Determine the penetration number of grease by using Cone Penetrometer.

Q.1. Measure of relative hardness of grease is referred as.....

- a) Consistency number b) Octane number c) cetane number d) None

Ans. a) Consistency number

Q.2. A semi fluid lubricant is called

- a) Grease b) oil c) both d) None

Ans. a) Grease

Q.3. Ingredients of grease are,

- a) Base oil b) Additives c) Thickener d) all

Ans. d) all

Q.4. Additives are.....,

- a) Calcium soap b) Sodium soap c) lithium soap d) All

Ans. d) all

Q.5. Consistency number of grease is measured by.....,

- a) Cone Penetrometer b) Viscometer c) Conradson's apparatus d) All

Octane number C) cetane number d) none

Ans. a) Cone Penetrometer

Q.6. The depth in tenth of millimeter to which prescribed weighted cone sinks into the grease sample is called....

- a) Grease penetration number b) Octane number C) cetane number d) None

Ans. a) Grease penetration number

Q.7. Higher the penetration number of grease it will be

- a) Softer b) Harder c) smooth d) Rough

Ans. a) Softer

Q.8. Lower the penetration number of grease it will be

- a) Softer b) Harder c) smooth d) Rough

Ans. b) Harder

Q.9. When continuous supply of oil cannot be retained..... is used for lubrication.

- a) Solid lubricant b) Grease c) Graphite d) All

Ans. b) Grease

Q.10. The full form of 'NLGI' is.....

- a) National Lubricating Grease Institute b) National legal grade institute
c) National Lubrication Grade Institute d) None

Ans. a) National Lubricating Grease Institute

Q.11. The National Lubricating Grease Institute (NLGI) has established consistency numbers or grade numbers from

- a) 0 to 10 b) 0 to 100 c) 000 to 6 d) 0 to 2

Ans. c) 000 to 6

Q.12. Higher the consistency of grease the NLGI number will be

- a) Higher b) Lower c) moderate d) zero

Ans. a) Higher

Q.13. Greases are not used to lubricate ...

- a) Rail axle boxes b) gears c) bearings d) delicate instruments

Ans. d) delicate instruments