AUTOMOTIVE ENGINE(TH=4)

4TH SEMESTER

AUTOMOBILE ENGINEERING

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CHAPTER=1

PETROL ENGINE AND ITS CONSTRUCTIONAL DETAILS

2 MARKS:-

1. Define the function of piston. [2019(S)]
2. Define the function of connecting rod. [2019(S)]
3. Define octane number. [2019(S)]
4. Define cetane number. [2019(S)]
5. Define bore in internal combustion engine. [2019(S)]
6. What is dead center?
7. Define the function of valve in IC engine.
8. What is the function of connecting rod?
9. Define firing order of IC engine with suitable example. [2019(S)]
10. What is clearance volume? [2019(S)]

5MARKS:-

1. Explain the construction and working principle of two stroke petrol engine/otto cycle engine/constant volume engine with diagram. [2018(S)]
2. Explain about the side valve actuating mechanism. [2019(S)]
3. Draw and explain valve timing diagram of a 4-stroke otto cycle engine. [2018(S)]
4. Write the difference between 2-stroke and 4-stroke petrol engine.
5. Write the constructional details of crank shaft with materials. [2019(S)]

10 MARKS:-

1. Explain the working principle and construction of 4-stroke petrol engine. [2018(S)]
2. Draw the line diagram of petrol engine fuel supply system. [2019(S)]
3. Explain the details of supercharging in SI engine. [2018(S)]

CHAPTER=2

DIESEL ENGINE AND ITS CONSTRUCTIONAL DETAILS

2 MARKS:-

1. What do you mean by knocking of a diesel engine? [2019(W)]
2. What is crankcase ventilation? [2019(W)]
3. Explain combustion chamber and its types. [2022(S)]

5MARKS:-

1. Explain detonation and its control. [2019(W)]
2. Write the working principle of two stroke diesel engine.
3. Write the advantages and limitations of diesel engine over petrol engine.
4. Explain different types of combustion chamber in diesel engine.
5. Differentiate between petrol engine and diesel engine. [2022(S)]
6. Describe the constructional detains of swirl combustion chamber. [2022(S)]

10 MARKS:-

1. Explain the combustion stages in CI engine with diagram. [2019(W)]
2. Write down the working principle of four stroke diesel engine with diagram. [2019(W)]
3. Explain the different types of combustion chamber and their advantages and disadvantages. [2019(W)]

CHAPTER=3

PERFORMANCE OF IC ENGINE

2 MARKS:-

1. What is mechanical efficiency of an IC engine? [2019(W)]
2. Define indicated thermal efficiency.
3. Define brake thermal efficiency.
4. Define mean effective pressure. [2022(S)]
5. Define specific fuel consumption.
6. What is air-fuel ratio?
7. What is calorific value of fuel?
8. What is the full form of IHP? [2019(W)]
9. Differentiate between mechanical efficiency and indicate thermal efficiency. [2022(S)]

10 MARKS:-

1. Explain Morse test and preparation of heat balance sheet.
2. The following particulars refer to a 2-stroke diesel engine:-Bore=10 cm, Stroke=15 cm, Piston speed=300 m/min, Torque developed=58 Nm, Mechanical efficiency=80%, Indicated thermal efficiency=40%, Calorific value of the fuel=44 MJ/Kg.
Determine

- **i) Indicated power**
- **ii) Indicated mean effective pressure**
- **iii) Fuel consumption per KWH on brake power output.**
  [2022(S)]

CHAPTER=4

FUEL FEED SYSTEM FOR PETROL AND DIESEL ENGINE

2 MARKS:-

1. Write different components of fuel feed system. [2022(S)]
2. State the function of carburetor. [2022(S)]
3. Write different types of carburetors.
4. What is fuel injector?
5. What is governor?
6. What is the full form of MPFI? [2022(S)]

5 MARKS:-

1. Write the constructional details of fuel pump. [2019(W)]
2. Describe the diesel engine fuel feed system. [2022(S)]
3. Explain hydraulic governor with figure. [2019(W)]
4. Explain pneumatic governor with figure.
5. Describe MPFI system.
6. Describe the requirement of fuel injection system. [2022(S)]

10 MARKS:-

1. Explain the requirements and types of fuel injection system.
2. Explain details of MPFI system with diagram. [2019(W)]
3. Describe about the common rail fuel injection system with its advantages. [2022(S)]

CHAPTER=5

COOLING SYSTEM

2 MARKS:-

1. Define air cooling.
2. Define water cooling.
3. What is thermo-siphon?
4. Write the advantages of water cooling.
5. Write the disadvantages of water cooling.
6. Write the advantages of air cooling.
7. Write the disadvantages of air cooling.
8. Explain the cooling system and its types used in I.C engine.

5 MARKS:-

1. Write the advantages and disadvantages of air cooling.
2. Explain water pump thermostat and radiator.
3. Explain anti-freezing and anti-corrosive additives.
4. Describe the splash lubrication system of an automobile. [2022(S)]

10 MARKS:-

1.Explain the constructional details of water cooling with diagram.
2. Explain the construction details of air cooling with diagram.
3. Explain about the constructional details of thermo siphon cooling system and pump circulated cooling system. [2022(S)]

CHAPTER=6

LUBRICATION SYSTEM

2 MARKS:-

1. Define flash point.
2. What is the fire point of lubricants? [2019(W)]
3. Write different types of lubrications system used in an automobile. [2022(S)]
4. What is oil filter?
5. Write different types of oil filter.
6. What is crank case ventilation?

5 MARKS:-

1. Explain gravity & splash type of lubrication system.
2. Explain pressure & splash type of lubrication system.
3. Explain dry sump type of lubrication system.
4. Explain semi-pressure type of lubrication system.
5. What is oil filter? Explain full flow and bypass filter.
6. What are the types of lubricants give example of each type.

10 ARKS:-

1. Define flash point. What are the types of lubricants give example of each type.
2. Explain pressure & splash type of lubrication system with diagram.

CHAPTER=1&2

PETROL /DIESEL ENGINE AND ITS CONSTRUCTIONAL DETAILS

1. The working cycle in case of four stroke engine is completed in following number ofrevolutions of crankshaft
(a) 1/2
(b) 1
(c) 2
(d) 4
(e) 8.
Ans: c

2. In a diesel engine, the fuel is ignited by
(a) spark
(b) injected fuel
(c) heat resulting from compressing air that is supplied for combustion
(d) ignition
(e) Combustion chamber.
Ans: c

3. Scavenging air in diesel engine means
(a) air used for combustion sent under pres-sure
(b) forced air for cooling cylinder
(c) burnt air containing products of combustion
(d) air used for forcing burnt gases out of engine's cylinder during the exhaust period
(e) air fuel mixture.
Ans: d

4. Supercharging is the process of
(a) supplying the intake of an engine with air at a density greater than the density of thesurrounding atmosphere
(b) providing forced cooling air
(c) injecting excess fuel for raising more load
(d) supplying compressed air to remove combustion products fully
(e) Raising exhaust pressure.
Ans: a

5. Does the supply of scavenging air at a density greater than that of

atmosphere mean engine issupercharged ?

(a) yes
(b) no
(c) to some extent
(d) unpredictable
(e) depends on other

factors.

Ans: b

6. The ratio of indicated thermal efficiency to the corresponding air standard cycle efficiency iscalled
(a) net efficiency

(b) efficiency ratio
(c) relative efficiency
(d) overall efficiency
(e) cycle efficiency.

Ans: c

7. Compression ratio of I.C. engines is
(a) the ratio of volumes of air in cylinder before compression stroke and after compression stroke
(b) volume displaced by piston per stroke and clearance volume in cylinder
(c) ratio of pressure after compression and before compression
(d) swept volume/cylinder volume
(e) cylinder volume/swept volume.

Ans: a

8. The air standard efficiency of an Otto cycle compared to diesel cycle for the given compressionratio is
(a) same
(b) less
(c) more
(d) more or less depending on power rating
(e) unpredictable.

Ans: c

9. The calorific value of gaseous fuels is expressed in terms of
(a) kcal
(b) kcal/kg
(c) kcal/m2
(d) kcal/n?
(e) all of the above.

Ans: d

10. If the intake air temperature of I.C. engine increases, its efficiency will
(a) increase

(b) decrease
(c) remain same
(d) unpredictable
(e) Depend on other factors.
Ans: b

12. All heat engines utilize
(a) low heat value of oil
(b) high heat value of oil
(c) net calorific value of oil
(d) calorific value of fuel
(e) all of the above.
Ans: a

17. In a typical medium speed 4-stroke cycle diesel engine the inlet valve
(a) opens at 20° before top dead center and closes at 35° after the bottom dead center
(b) opens at top dead center and closes at bottom dead center
(c) opens at 10° after top dead center and closes 20° before the bottom dead center
(d) may open or close anywhere
(e) remains open for 200°.
Ans: a

18. The fuel in diesel engine is normally injected at pressure of
(a) 5-10 kg/cm2
(b) 20-25 kg/cm2
(c) 60-80 kg/cm2
(d) 90-130 kg/cm2
(e) 150-250 kg/cm2
Ans: d

30. The inlet value of a four stroke cycle I.C engine remains open for nearly
(a) 180°
(b) 125°
(c) 235°
(d) 200°
(e) 275°.
Ans: c

31. Which of the following is not an internal combustion engine
(a) 2-stroke petrol engine
(b) 4-stroke petrol engine
(c) diesel engine
(d) gas turbine

(e) steam turbine.

Ans: e

32. Pick up the false statement
(a) Thermal efficiency of diesel engine i about 34%
(b) Theoretically correct mixture of air am petrol is approximately 15 : 1
(c) High speed compression engines operate on dual combustion cycle
(d) Diesel engines are compression ignition engines
(e) S.I. engines are quality-governed engines.

Ans: e

33. If one cylinder of a diesel engine receives more fuel than the others, then for that cylinder the
(a) exhaust will be smoky
(b) piston rings would stick into piston grooves
(c) exhaust temperature will be high
(d) engine starts overheating
(e) scavenging occurs.

Ans: e

34. It the temperature of intake air in IC engines is lowered, then its efficiency will
(a) increase
(b) decrease
(c) remain same
(d) increase upto certain limit and then decrease
(e) decrease upto certain limit and then in-crease.

Ans: a

35. In a typical medium speed 4-stroke cycle diesel engine
(a) compression starts at 35° after bottom dead center and ends at top dead center
(b) compression starts at bottom dead center and ends at top dead center
(c) compression starts at 10° before bottom dead center and, ends just before top dead center
(d) may start and end anywhere
(e) none of the above.

Ans: a

36. For the same compression ratio
(a) Otto cycle is more efficient than the Diesel
(b) Diesel cycle is more efficient'than Otto
(c) both Otto and Diesel cycles are, equally efficient
(d) compression ratio has nothing to do with efficiency
(e) which is more efficient would depend on engine capacity.

Ans: a

37. **The precess of breaking up or a lipuid into fine droplets by spraying is called**
(a) **vaporisation**
(b) **carburetion**
(c) **ionisation**
(d) **injection**
(e) **atomisation.**

Ans: e

48. **Which of the following medium is compressed in a Diesel engine cylinder**
(a) **air alone**
(b) **air and fuel**
(c) **air and lub oil**
(d) **fuel alone**
(e) **air, fuel and lub oil.**

Ans: a

54. **The air-fuel ratio of the petrol engine is controlled by**
(a) **fuel pump**
(b) **governor**
(c) **injector**
(d) **carburettor**
(e) **scavenging.**

Ans: d

55. **In a typical medium speed, 4-stroke cycle diesel engine**
(a) **Fuel-injection starts at 10° before to dead center and ends at 20° after tor dead center**
(b) **fuel injection starts at top dead center and ends at 20° after top dead center**
(c) **fuel injection starts at just before top dead center and ends just after top deac center**
(d) **may start and end anywhere**
(e) **none of the above.**

Ans: a

56. **Diesel fuel, compared to petrol is**
(a) **less difficult to ignite**
(b) **just about the same difficult to ignite**
(c) **more difficult to ignite**
(d) **highly ignitable**
(e) **none of the above.**

Ans: c

57. **When crude oil is heated, then which of the following hydrocarbon is given off first.**
(a) **kerosene**
(b) **gasoline**
(c) **paraffin**
(d) **diesel**

(e) natural gas.

Ans: e

58. The rating of a diesel engine, with increase in air inlet temperature, will
(a) increase linearly
(b) decrease linearly
(c) increase parabolically
(d) decrease parabolically
(e) first decrease linearly and then increase parabolically.

Ans: b

59. A 75 cc engine has following parameter as 75 cc
(a) fuel tank capacity
(b) lub oil capacity
(c) swept volume
(d) cylinder volume
(e) clearance volume.

Ans: c

60. A heat engine utilises the
(a) calorific value of oil
(b) low heat value of
(c) high heat value of oil
(d) mean heat value of oil
(e) all of the above.

Ans: c

61. Gaseous-fuel guarantees are based on
(a) calorific value of oil
(b) low heat value of oil
(c) high heat value of oil
(d) mean heat value of oil
(e) all of the above.

Ans: b

62. Fuel consumption of diesel engines is not guaranteed at one quarter load because at such lowloads
(a) the friction is high
(b) the friction is unpredictable
(c) the small difference in cooling water temperature or in internal friction has a disproportionateeffect
(d) the engine is rarely operated
(e) none of the above.

Ans: c

63. Polymerisation is a chemical process in which molecules of a compound

become

(a) larger
(b) slowed down
(c) smaller
(d) liquid
(e) gaseous.

Ans: a

64. The term scavenging is generally associated with
(a) 2-stroke cycle engines
(b) 4-stroke cycle engines
(c) aeroplane engines
(d) diesel engines
(e) High efficiency engines.

Ans: e

65. In diesel engine, the compression ratio in comparison to expansion ratio is
(a) same
(b) less
(G) more
(d) variable
(e) More/less depending on engine

capacity.

Ans: c

66. The cam shaft of a four stroke I.C. engine running at 1500 rmp will run at
(a) 1500 rpm
(b) 750 rpm
(c) 3000 rpm
(d) any value independent of engine speed
(e) None of the above.

Ans: b

67. Engine pistons 'are usually made of aluminum alloy because it
(a) is lighter
(b) wears less
(c) absorbs shocks
(d) is stronger
(e) does not react with fuel and lub

oil.Ans: a

68. Most high speed compression engines operate on
(a) Otto cycle
(b) Diesel cycle
(c) Dual cycle
(d) Carnot cycle
(e) Two stroke cycle.

Ans: c

69. **The specific fuel consumption of a petrol engine compared to diesel engine of same H.P. is**
(a) **same**
(b) **more**
(c) **less**
(d) **less or more depending on operating conditions**
(e) **unpredictable.**

Ans: b

70. **A diesel engine as compared to petrol engine (both running ar rated load) is**
(a) **more efficient**
(b) **less efficient**
(c) **equally efficient**
(d) **unperdictable**
(e) **other factors will decide it**

Ans: a

71. **The size of inlet valve of.an engine in comparison to exhaust valve is**
(a) **more**
(b) **less**
(c) **same**
(d) **more/less depending on capacity of engine**
(e) **varies from design to design.**

Ans: b

74. **In a cycle, the spark lasts roughly for**
(a) **1 sec**
(b) **0.1 sec**
(c) **0.01 sec**
(d) **0.001 sec**
(e) 0.0001 sec.

Ans: d

75. **Which of the following is false statement :**
Excess quantities of sulphur in diesel fuel are Objectionable because it may cause the following
(a) **piston ring and cylinder wear**
(b) **formation of hard coating on piston skirts**
(c) **oil sludge in the engine crank case**
(d) **detonation**
(e) **forms corrosive acids.**

Ans: d

76. **The fuel air ratio in a petrol engine fitted with suction carburetor, operating with dirty airfilter as compared to clean filter will be**
(a) **higher**
(b) **lower**
(c) **remain unaffected**
(d) **unpredictable**

(e) none of the above.

Ans: a

77. The actual volume of fresh charge admitted in 4-stroke petrol engine is
(a) equal to stroke volume
(b) equal to stroke volume and clearance volume
(c) less than stroke volume
(d) more than stroke volume
(e) more than cylinder volume.

Ans: c

78. Supercharging is essential in
(a) diesel engines
(b) gas turbines
(c) petrol engines
(d) aircraft engines
(e) marine engines.

Ans: d

79. The minimum cranking speed in case of petrol engine is about
(a) half the operating speed
(b) one-fourth of operating speed
(c) 250-300 rpm
(d) 60-80 rpm
(e) 10-20 rpm

Ans: d

80. Flash point of fuel oil is
(a) minimum temperature to which1 oil is heated in order to give off inflammable vapours insufficient quantity to ignite momentarily when brought in contact with a flame
(b) temperature at which it solidifies or congeals
(c) temperature at which it catches fire without external aid
(d) indicated by 90% distillation temperature, i.e. when 90% of sample oil has distilled off
(e) none of the above.

Ans: a

81. Scavenging is usually done to increase
(a) thermal efficiency
(b) speed
(c) power output
(d) fuel consumption

(e) all of the above.

Ans: c

82. Which of the following is the lightest and most volatile liquid fuel
(a) diesel
(b) kerosene
(c) fuel oil
(d) gasoline
(e) lub oil.

Ans: d

83. The theoretically correct air fuel ratio for petrol engine is of the order of
(a) 6 : 1
(b) 9 : 1
(c) 12 : 1
(d) 15 : 1
(e) 20 : 1.

Ans: d

84. Air fuel ratio for idling speed of a petrol engine is approximately
(a) 1 : 1
(b) 5 : 1
(c) 10:1
(d) 15 : 1
(e) 20 : 1.

Ans: c

85. Air fuel ratio at which a petrol engine can not work is
(a) 8 : 1
(b) 10 : 1
(c) 15 : 1
(d) 20 : 1 and less
(e) will work at all
ratios.Ans: d

86. For maximum power generation, the air fuel ratio for a petrol engine for vehicles, is of theorder of

(a) 9 : 1

(b) 12 : 1

(c) 15 : 1

(d) 18 : 1

(e) 20: 1.

Ans: b

87. Pour point of fuel oil is the

(a) minimum temperature to which oil is heated in order to give off inflammable vapours insufficient quantity to ignite momentarily when brought in contact with a flame

(b) temperature at which it solidifies or congeals

(c) it catches fire without external aid

(d) indicated by 90% distillation temperature i.e., when 90% of sample oil has distilled off

(e) temperature at which it flows easily.

Ans: b

88. A diesel engine has

(a) 1 valve

(b) 2 valves

(c) 3 valves

(d) 4 valves

(e) no valve.

Ans: c

89. The knock in diesel engine occurs due to

(a) instantaneous and rapid burning of the first part of the charge

(b) instantaneous atuo iginition of last part of charge

(c) delayed burning of the first part of the charge

(d) reduction of delay period

(e) all ot the above.

Ans: a

90. The air-fuel ratio in petrol engines-is controlled by

(a) controlling valve opening/closing

(b) governing

(c) injection

(d) carburettion

(e) scavenging and supercharging.

Ans: d

91. Volatility of diesel fuel oil is

(a) minimum temperature to which oil is heated in order to give off inflammable vapours insufficient quantity to ignite momentarily when brought in contact with a flame

(b) temperature at which it solidifies or congeals

(c) it catches fire without external aid

(d) indicated by 90% distillation temperature, i.e., when 90% of sample oil has distilled off

(e) temperature at which it flows easily.

Ans: d

92. A stoichiometric air-fuel ratio is
(a) chemically correct mixture
(b) lean mixture
(c) rich mixture for idling
(d) rich mixture for over loads
(e) the ratio used at full rated parameters.

Ans: a

93. In the crankcase method of scavenging, the air pressure is produced by
(a) supercharger
(b) centrifugal pump
(c) natural aspirator
(d) movement of engine piston
(e) reciprocating pump.

Ans: d

CHAPTER=3
PERFORMANCE OF IC ENGINE

1. The working cycle in case of four stroke engine is completed in following number of revolutions of crankshaft

(a) 1/2
(b) 1
(c) 2
(d) 4
(e) 8.

Ans: c

2. In a diesel engine, the fuel is ignited by

(a) spark
(b) injected fuel
(c) heat resulting from compressing air that is supplied for combustion
(d) ignition
(e) combustion chamber.

Ans: c

3. Scavenging air in diesel engine means

(a) air used for combustion sent under pres-sure
(b) forced air for cooling cylinder
(c) burnt air containing products of combustion
(d) air used for forcing burnt gases out of engine's cylinder during the exhaust period
(e) air fuel mixture.

Ans: d

4. Supercharging is the process of
(a) supplying the intake of an engine with air at a density greater than the density of the surrounding atmosphere
(b) providing forced cooling air
(c) injecting excess fuel for raising more load
(d) supplying compressed air to remove combustion products fully
(e) raising exhaust pressure.
Ans: a

5. Does the supply of scavenging air at a density greater than that of atmosphere mean engine is supercharged ?
(a) yes
(b) no
(c) to some extent
(d) unpredictable
(e) depends on other factors.
Ans: b

6. The ratio of indicated thermal efficiency to the corresponding air standard cycle efficiency is called
(a) net efficiency
(b) efficiency ratio
(c) relative efficiency
(d) overall efficiency
(e) cycle efficiency.
Ans: c

7. Compression ratio of LC. engines is
(a) the ratio of volumes of air in cylinder before compression stroke and after compression stroke
(b) volume displaced by piston per stroke and clearance volume in cylinder
(c) ratio of pressure after compression and before compression
(d) swept volume/cylinder volume
(e) cylinder volume/swept volume.
Ans: a

8. The air standard efficiency of an Otto cycle compared to diesel cycle for the given compression ratio is
(a) same
(b) less
(c) more
(d) more or less depending on power rating
(e) unpredictable.
Ans: c

9. The calorific value of gaseous fuels is expressed in terms of

(a) kcal
(b) kcal/kg
(c) kcal/m2
(d) kcal/n2
(e) all of the above.

Ans: d

11. If the intake air temperature of I.C. engine increases, its efficiency will

(a) increase
(b) decrease
(c) remain same
(d) unpredictable
(e) depend on other factors.

Ans: b

12. All heat engines utilize

(a) low heat value of oil
(b) high heat value of oil
(c) net claorific value of oil
(d) calorific value of fuel
(e) all of the above.

Ans: a

13. An engine indicator is used to determine the following

(a) speed
(b) temperature
(c) volume of cylinder
(d) m.e.p. and I.H.P.
(e) BHP.

Ans: d

14. Fuel oil consumption guarantees for I .C. engine are usually based on

(a) low heat value of oil
(b) high heat value of oil
(c) net calorific value of oil
(d) calorific value of fuel
(e) all of the above.

Ans: b

17. If the compression ratio of an engine working on Otto cycle is increased from 5 to 7, the %age increase in efficiency will be

(a) 2%
(b) 4%
(c) 8%
(d) 14%

(e) 27%.
Ans: d

18. In case of gas turbines, the gaseous fuel consumption guarantees are based on
(a) high heat value
(b) low heat value
(c) net calorific value
(d) middle heat value
(e) calorific value.
Ans: b

19. In a typical medium speed 4-stroke cycle diesel engine the inlet valve
(a) opens at 20° before top dead center and closes at 35° after the bottom dead center
(b) opens at top dead center and closes at bottom dead center
(c) opens at 10° after top dead center and closes 20° before the bottom dead center
(d) may open or close anywhere
(e) remains open for 200°.
Ans: a

20. The pressure and temperature at the end of compression stroke in a petrol engine ar of the order of
(a) 4 – 6 kg/cm2 and 200 – 250°C
(b) 6 – 12 kg/cm2 and 250 – 350°C
(c) 12 – 20 kg/cm2 and 350 – 450°C
(d) 20 – 30 kg/cm2 and 450 – 500°C
(e) 30 – 40 kg/cm2 and 500 – 700°C.
Ans: b

21. The pressure at the end of compression in the case of diesel engine is of the order of
(a) 6 kg/cm
(b) 12kg/cmz
(c) 20 kg/cmz
(d) 27.5 kg/cmz
(e) 35 kg/cm
Ans: e

22. The maximum temperature in the I.C. engine cylinder is of the order of
(a) 500- 1000°C
(b) 1000- 1500°C
(c) 1500-2000°C
(d) 2000-2500°C
(e) 2500-3000°C
Ans: d

23. The thermal efficiency of a diesel cycle having fixed compression ratio, with increase in cut-off ratio will

(a) increase
(b) decrease
(c) be independent
(d) may increase or decrease depending on other factors
(e) none of the above.
Ans: b

24. Pick up the wrong statement
(a) 2-stroke engine can run in any direction
(b) In 4-stroke engine, a power stroke is obtained in 4-strokes
(c) thermal efficiency of 4-stroke engine is more due to positive scavenging
(d) petrol engines work on otto cycle
(e) petrol engines occupy more space than diesel engines for same power output.
Ans: e

25. Combustion in compression ignition engines is
(a) homogeneous
(b) heterogeneous
(c) both (a) and (b)
(d) laminar
(e) turbulent.
Ans: b

26. The fuel in diesel engine is normally injected at pressure of
(a) 5-10 kg/cm2
(b) 20-25 kg/cm2
(c) 60-80 kg/cm2
(d) 90-130 kg/cm2
(e) 150-250 kg/cm2
Ans: d

27. The specific fuel consumption per BHP hour for diesel engine is approximately
(a) 0.15 kg
(b) 0.2 kg
(c) 0.25 kg
(d) 0.3 kg
(e) 0.35 kg.
Ans: b

28. The temperature of interior surface of cylinder wall in normal operation is not allowed to exceed
(a) 80°C
(b) 120°C
(c) 180°C
(d) 240°C

(e) 320°C.
Ans: c

30. Crankcase explosion in I.C. engines usually occurs as
(a) first a mild explosion followed by a bi explosion
(b) first a big explosion followed by a mil explosion
(c) both mild and big explosions occi simultaneously
(d) never occurs
(e) unpredictable.
Ans: a

CHAPTER=4

FUEL FEED SYSTEM FOR PETROL AND DIESEL ENGINE

1. In spark ignited engines, the fuel tank is placed _____
a) Above the level of carburettor
b) Below the cylinder
c) Below the level of carburettor
d) In the carburetor
Ans:a
2. The function of sediment bowl in fuel supply system is _____
a) To hold the dust and dirt of the fuel
b) To maintain a good pressure
c) To hold the air in the cylinder
d) To clear the air entering into combustion chamber
Ans:a
3. The engine part in which carburation takes place is _____
a) Radiator
b) Carburettor
c) Cylinder
d) Sediment bowling
Ans:b
4. In engines, the function of choke, is to _____
a) Provide a rich air-fuel mixture
b) Heat the engine
c) Increase fuel in the cylinder
d) Remove the cylinder blockage
Ans:a

5. In engine, the choke controls _____
a) Volume of fuel t
b) Heat of engine
c) Volume of air into venture
d) Speed of engine
Ans:c

6. The function of carburettor is to _____
a) Mix the land fuel
b) Supply the air into cylinder

c) Send the air-fuel mixture into the cylinder
d) Supply the fuel into cylinder
Ans:a

7. In IC engine, the throttle controls _____
a) Quantity of charge
b) Engine speed
c) Fuel into cylinder
d) Engine load
Ans:a

8. In carburettor of large tractor engines the type of jet used is _____
a) Fixed type
b) Rolling type
c) Adjustable type
d) Sliding type
Ans:c

9. Down draft carburettor are mostly used _____
a) Automobiles
b) Bullock cart
c) Mould board plough
d) U.P. No. 1
Ans:a

10. The fuel pump used in carburettor engine is _____
a) Gasoline pump
b) Gear pump
c) Fuel injection
d) Air injection
Ans:a

11. In diesel engine, the fuel is burnt _____
a) Inside the cylinder
b) Inside combustion chamber
c) In fuel tank
d) Inside radiator
Ans:b

12. In spark ignited engine the atomization of fuel takes place in _____
a) Radiator
b) Carburettor
c) Ignition chamber
d) Cylinder
Ans:b

13. Air cell chamber is the _____
a) Space provide in the piston or cylinder
b) Part of radiator
c) Fuel controller
d) Ignition controller
Ans:a

14. Turbo charger is a _____
a) Turbo compressor
b) Fuel controller
c) Lock in fuel supply line
d) Timber cell used for ignition
Ans:a

15. Air ignition pumps are mostly used in _____
a) Scooter
b) Tractor engines
c) Light engines
d) Heavy duty stationary engines
Ans:d

CHAPTER=5

COOLING SYSTEM

1. In an Internal Combustion engine, about_____of thelatent heat produced during combustion passes through the cylinder wall into the cooling system.

a. 10%

b. 20%

c. 30%

d. 40%

2. In motorcycles, the following type of cooling system isused

a. Air cooling system

b. Water cooling system

c. Both a and b

d. None of the above

3. In water cooling, the water in the jackets obtains heatfrom the cylinders due to

a. Conduction

b. Convection

c. Radiation

d. All of the above

4. The thermostatic valves opens and provides passage forthe flow of water towards the radiator at approximately

a. 90° C

b. 150° C

c. 250° C

d. 300° C

5. In thermosyphon system there is (are)

a. no pump

b. one pump

c. two pumps

d. three pumps

6. In water cooling system with pump circulation system,the following pump is used

a. Centrifugal pump

b. Reciprocating type

c. Rotary vane pump

d. Any of the above

7. The radiator is usually made of

a. Aluminium

b. Copper

c. Galvanised iron

d. Stainless steel

8. The following type of core of a radiator contains a largenumber of individual air cells which are surrounded by water

a. Tubular type

b. Gilled type

c. Honeycomb

d. All of the above

9. In_____radiator, each tube contains individual finssurrounding it.

a. Tubular type

b. Gilled type

c. Honeycomb

d. All of the above

10. The use of pressure cap on the radiator_____withinthe cooling system.

a. Increases air pressure

b. Decreases air pressure

c. keeps air pressure same

d. None of the above

11. The cooling fan is

a. fitted between the engine and the radiator
b. driven by belt and pulleys

c. driven from the camshaft

d. All of the above

12. The variable speed fan drive uses a

a. Flange coupling

b. Universal coupling

c. Fluid coupling

d. Oldham's coupling

13. The following type of thermostatic valve is (are) filledwith liquid such as Acetone or Alcohol

a. Bellows type

b. Sleeve type

c. Butterfly type

d. All of the above

14. The following is considered as best antifreeze solution

a. Ethylene glycol

b. Distilled glycerine

c. Methanol

d. Denatured alcohol

CHAPTER=6
LUBRICARION SYSTEM

1. Lubricating oil

a. Minimizes wear in moving parts
b. Helps in keeping the parts cool
c. Washes away and carries away dirt
d. All of the above

2. Viscosity index (VI) is a measure for the change ofviscosity with change in

a. Temperature

b. Pressure
c. Volume

d. All of the above

3. The following type of Lubrication system is used in twostroke engines

a. Petrol (mist) system

b. Wet sump system
c. Dry sump system

d. All of the above

4. In the following system, lubricating oil is carried in separate tanks from where it is fed to the engine

a. Mist lubrication system

b. Wet sump system
c. Dry sump system

d. Splash system

5. The following type of Lubrication system is used in Aircraft Engines

a. Mist lubrication system

b. Wet sump system
c. Dry sump system

d. Splash system

6. The following type(s) of Oil pump(s) is (are) used in Engine Lubrication system

a. Gear type

b. Rotor type
c. Plunger type

d. All of the above

7. The following is (are) oil pressure gauge(s)

a. Pressure expansion type
b. Electric type

c. both a and b

d. None of the above

8. The purpose of crankcase ventilation is to

a. remove harmful particles from the engine
b. provide proper lubrication to the engine

c. provide air for combustion to the engine
d. all of the above

9. The following part(s) is(are) lubricated by splashsystem

a. Piston and piston rings

b. Tappets
c. Cams on camshaft
d. All of the above

10. The following part is not lubricated by Pressure feedsystem

a. Timing gears

b. Valve rods and Push rods
c. Rocker arms

d. Main bearings of crankshaft

11. High engine oil consumption cannot he caused by

a. Oil leakage into combustion chambers

b. Leaking valve cover gaskets
c. Leaking exhaust manifold gaskets

d. Worn piston rings or cylinders

12. High oil consumption is indicated by

a. Oil added to engine frequently
b. Oil indicator light glows

c. Abnormal engine noises
d. Oil. wet areas on a or around the engine

13. Greases perform better than oils under conditions requiring

a. cleanliness or avoidance of splash

b. minimum attention
c. a seal against external contaminants
d. all of the mentioned

14. The various types of greases used for lubrication are

a. calcium soap greases
b. sodium soap greases

c. aluminium soap greases
d. all of the mentioned

15. Flickering oil pressure warning light and off at stoplights is an indication of

a. Light Circuit at fault
b. Oil level in the engine low

c. Low pressure problems

d. Oil contaminated

16. The various grads of oils/referred to

a. American Society of Automotive Engines.

b. British Society of Automotive Engines.

c. Pakistan Society of Automotive Engines.

d. Japan Society of Automotive Engines.

17. Greases perform better than oils under conditionsrequiring

a. high bearing loads and shock loads

b. slow journal speed

c. temperature extremes

d. all of the mentioned

18.Pressure fed oiling is not used with

a. Crankshaft hearings

b. Camshaft bearings

c. Hydraulic lifters

d. Cylinder walls

19. _____are small passages through the cylinderhead and block for lubricating oil

a. Oil galleries

b. Oil clearances

c. Oil film

d. None of the above

20. Viscosity numbering system is used to rate the _____

of engine, oil.

a. Thickness

b. Oil weight

c. Oil gravity

d. Oil temperature

21. Which type of lubrication system is used in two-strokeengine?

a. Mist lubrication system

b. Wet sump lubrication system

c. Dry sump lubrication system

d. Splash lubrication system

22. In most automobiles, which lubrication system iscommonly used?

a. Splash system

b. Pressure system

c. Petrol system

d. Gravity system

23. The pressure inside the lubrication system iscontrolled by

a. Oil pump
b. Oil filter

c. Relief valve
d. Supply voltage

24. What is the need for crankcase ventilation?

a. To cool cylinder
b. To cool crankcase

c. To cool piston
d. To remove blow-by

25. Why are the detergents used as oil additives?

a. To increase fire point
b. To prevent foaming

c. To prevent sludge formation
d. To reduce viscosity

26. Which of the following is the most important propertyof the lubricant?

a. Density
b. Thermal conductivity

c. Viscosity

d. Melting point

27. Which of the following viscosity indices shows thelarger changes in viscosity with temperature?

a. 50

b. 100
c. 45
d. 10

28. Which of the following of oils is multi-grade oil?

a. SAE 10W 30

b. SAE 25W

c. SAE 10
d. SAE 20W

29. Which of the following oils has the highest viscosity?

a. SAE 20
b. SAE 10
c. SAE 50

d. SAE 45