



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Coimbatore – 35



## Department of Automobile Engineering

19AUB304 - VMRC

Two Marks

### UNIT II ENGINE MAINTENANCE – REPAIR AND OVERHAULING

1. State the function of Engine analyzer?

An engine analyzer is a complex, multi-function instrument, sometimes called a scope, that can help diagnose engine and engine-related problems or assist in tuning following an overhaul. An engine analyzer can be used with gasoline and diesel powered vehicles.

2. State the effect on engine performance if cylinder head gasket got damaged

- A faulty or damaged head gasket will leak coolant, so the coolant level indicator will be very low.
- Vehicle not running smoothly
- Dis colored oil.

3. Define Engine Tune up?

Engine tuning is an adjustment, modification of the internal combustion engine or modification to its control unit, otherwise known as its ECU (Engine Control Unit). It is performed to yield optimal performance, to increase an engine's power output, economy, or durability. These goals may be mutually exclusive, and an engine may be detuned with respect to output (work) in exchange for better economy or longer engine life due to lessened stress on engine components.

4. What is cylinder honing process? Why it is done?

The main objective when refinishing the cylinders is to make the walls as straight as possible (no taper), the bores as round as possible (minimal distortion, which is especially important with low tension rings), to have the right amount of crosshatch for good oil retention and ring support, and to produce a surface finish that meets the requirements of the rings. This is done by boring and/or honing the cylinders in one or several steps with various types of abrasives (vitrified or diamond).

5. List out the basic instruments that are needed for tuning of a petrol engine.

- |                     |                            |
|---------------------|----------------------------|
| 1. Double spanner   | 9. Cell tester             |
| 2. Ball-peen hammer | 10. Wrenches               |
| 3. Pliers           | 11. Screwdriver            |
| 4. Feeler gauge     | 12. Dial indicator         |
| 5. Hydrometer       | 13. Piston ring expander   |
| 6. Battery charger  | 14. Piston ring compressor |

- 7. Files
- 8. Socket Spanner

- 15. Valve spring compressor
- 16. Pulley

6. What are the causes of overheating of engines?

Overheating can be caused by anything that decreases the cooling system's ability to absorb, transport and dissipate heat: A low coolant level, a coolant leak (through internal or external leaks), poor heat conductivity inside the engine because of accumulated deposits in the water jackets, a defective thermostat that doesn't open, poor airflow through the radiator, a slipping fan clutch, an inoperative electric cooling fan, a collapsed lower radiator hose, an eroded or loose water pump impeller, or even a defective radiator cap.

7. What is meant by glass bead cleaning?

Glass bead blasting is a metal cleaning process that creates a clean, bright, uniform matte texture. The glass beads are applied to a surface using low air pressure. This process removes paint, rust and corrosion from all types of metals, from autos, trucks, equipment, machinery engine blocks, heads and intakes. Using the bead blasting process a surface can be cleaned without any damage. The beads come in a variety of sizes. The smaller the glass beads, the smoother the surface, larger beads produce a more textured finish.

8. Mention the main source of bearing failure

1. One of the most common sources of trouble in bearings is wear and pitting caused by foreign particles. This could be in the form of dirt, abrasive grit, lint, dust, steel chips, etc.

**2.Improper Mounting:** Bearings should be mounted with a press fit on the rotating ring. Generally, the shaft rotates and the inner ring is mounted with a press or interference fit.

**3.Bearing Misalignment:** A frequent source of trouble resulting in overheating and separator failure. Common causes are bent shafts, out-of-square shaft shoulders, out-of-square spacers, and out-of-square clamping nuts. Inspection of the raceways will show the ball track veering from one side to the other.

**4.Improper Bearing Lubrication:** Lack of or improper lubrication generally causes overheating or excessive wear in the bearing. These conditions can result from insufficient lubrication, improper lubricants, complete absence of lubrication, or insufficient lubrication due to loss through leakage. Also to be considered is the breakdown of lubricants either by oxidation or exposure to atmospheric conditions.