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No. of Printed Pages : 4

**BME-061**

# DIPLOMA IN MECHANICAL ENGINEERING (DME)

## Term-End Examination

## December, 2015

## BME-061 : AUTOMOBILE ENGINEERING

*Time : 2 hours* *Maximum Marks : 70*

***Note :*** *Answer **five** questions in all. Question no. **1** is **compulsory**. All questions carry equal marks. Use of scientific calculator is permitted.*

**1.** Multiple choice questions. Choose correct answer. *7×2=14*

(i) The radiator tubes are manufactured by using

(a) CI tubes

(b) Aluminium tubes

(c) Brass tubes

(d) Steel tubes

(ii) Knowing the IHP and FHP of an engine, we can calculate

(a) Compression ratio

(b) rpm

(c) SAF

(d) BHP

(iii) The average pressure during the power stroke minus the average pressure during the intake, compression and exhaust is called

(a) IHP

(b) BHP

(c) Compression ratio

(d) m.e.p.

(iv) The device for smoothing out the power impulses from the engine is called

(a) Flywheel

(b) Cam shaft

(c) Crank shaft

(d) Clutch

(v) In 4-stroke diesel engine, during compression stroke

(a) the piston moves from BDC to TDC

(b) the piston moves from TDC to BDC

(c) the crank rotates by 90°

(d) the crank rotates by 270°

(vi) The active material in a charged negative plate is

(a) Lead sulphate

(b) Lead peroxide

(c) Lead metal

(d) Lead perchloride

(vii) The brake-shoes are curved to confirm to the inner dia of the

(a) Tyre

(b) Wheel

(c) Pedal

(d) Brake drum

**2.** (a) Discuss the working of Davis steering with a neat sketch. 7

(b) Describe the working of the clutch system widely used in two wheelers. 7

**3.** (a) Discuss the working of 2-stroke SI (petrol) engine with a neat sketch. 7

(b) Explain the differences between 2-stroke and 4-stroke engines. 7

**4.** (a) Describe the working of a battery ignition system with the help of a suitable diagram. 7

(b) Describe the working of a differential with a neat sketch. 7

**5.** (a) List the advantages of tubeless tyres. 7

(b) What do you mean by chassis ? Explain. 7

6. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$

(a) Mufflers

(b) Telescopic Shock Absorber

(c) Power Stearing

(d) Camber Angle

7. (a) Describe in brief the leaf spring suspension system. 7

(b) The gearing of a machine tool is shown in Figure 1. The motor shaft is connected to gear A and rotates at 975 rpm. The gear wheels B, C, D and E are fixed to parallel shafts rotating together. The final gear F is fixed on the output shaft. What is the speed of gear F ? The number of teeth on each gear are as given below : 7

| Gear | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| No. of teeth | 20 | 50 | 25 | 75 | 26 | 65 |

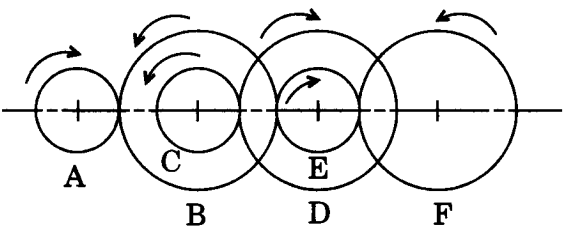


*Figure 1*