Roll no._____ **ID: 180345**

Semester: 4th

Branch: Auto

Subject Name: Automobile Engineering Drawing

Time Allowed : 3 Hrs. **MM:100**

Section –A

Note: Multiple Choice questions. All questions are compulsory. (CO1) 10x1=10

Q.1 Upper deviation is the algebraic difference between the _____ and corresponding basic size.
a) actual size b) minimum limit of the size
c) maximum limit of the size d) design size

Q.2 Which of the following is the disadvantage of the open differential?
a) High in cost b) Not reliable
c) Complex design d) Sends most of the power to the wheel having less traction

Q.3 Bevel gears impose ____ loads on the shafts.
a) Radial and thrust b) Radial
c) Thrust d) Neither radial nor thrust

Q4. Maximum clearance is the difference between _____ size of the hole and the _____ size of the shaft.
a) minimum, maximum b) minimum, minimum
c) maximum, maximum d) maximum, minimum

Q.5 The relation between mating parts is called _____
a) Connection b) Fits
c) Joints d) Link

Q6. The international difference between the , maximum material limits of the two mating parts is called
a) Allowance b) Limits of size
c) Tolerance d) Clearance

Q7. Which of the following are true for worm gears?
a) Worm is in the shape of threaded screw
b) Threads on the worm have small lead
c) Worm imposes high thrust loads
d) Characterised by low speed reduction ratio

Q8. In a shaft basis system , the upper deviation of the size of the shaft is
a) Not related to size b) Zero
c) Less than zero d) More than zero

Q.9 Which of the following can be used for power transmission in intersecting shafts.
a) Spur Gear b) Helical Gear
c) Bevel Gear d) None of the listed

Q.10 For a constant velocity ratio, the common normal to the tooth profile at point of contact must pass through a continuously variable point.
a) True b) It pass through a fixed point
c) Constant velocity ratio isn't required, hence variable point is preferred
d) None of the listed

Section-B

Note: Attempt any five questions, each carries two marks. (CO2,3) 5X2=10

Q.11 Define pitch circle diameter of gear.

Q.12 Define shaft basis system.

Q.13 Define addendum circle.

Q.14 What is the function of engine cylinder?

Q.15 Name types of ignition system?
Q.16 Draw roller follower.

Section-C

Note: Draw free hand sketch of any two. (CO-2) 10x2=20

Q.17 Overhead valve mechanism
Q.18 Leaf spring suspension
Q.19 Roller bearing. OR Brake drum assembly

Section-D

Note: Long answer type questions. Attempt any two questions out of three questions. 2x30=60

Q20. Draw the profile of involute teeth by Approximate method having 20 teeth, module pitch 12 mm and o pressure angle 22 . Draw atleast three teeth. (CO4)

Q.21 Draw the profile of the cam to give following motion to the knife edge follower having centre in line with cam with stroke height of 70mm,

a) Follower to move outward/ rise during 120o of cam rotation
b) Follower to dwell for 90o of cam rotation.
c) Follower of return its original position 90oof cam rotation.
d) Follower of dwell for the remaining rotation of the cam.

The minimum radius of cam is 45mm the outward and inward strokes of the follower are to take place with simple harmonic motion. (CO-4)

Q.22 Draw following orthographic views of Spark plug by taking appropriate dimensions:
a) Front view, full in section b) Side view. (CO3)