Unit 9 - Week 7

Assignment 7

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-15, 23:59 IST.

DATA: (For questions 1 to 4)

A standard and uncorrected gear (External tooth) set has 20^0 full depth 13 teeth for both driven and driver gears, with 32.5 mm centre distance. Then estimate the followings.

1) The module (in mm) is: *1 point*

a. 1.5
b. 2.5
c. 3.5
d. 4.5

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

2) Tooth thickness (mm) at working P.C.D. is equal or close to: *1 point*

a. 3.727
b. 3.927
c. 3.327
d. 3.527

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

3) Pressure angle at tooth tip is equal or close to: *1 point*

a. 35° 28' 19"
b. 31° 28' 19"
c. 37° 28' 19"
d. 33° 28' 19"

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

4) Tooth tip (arc) thickness (mm) is equal or close to: *1 point*

a. 4.585
b. 3.585
c. 2.585
d. 1.585

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

DATA: (For questions 5 to 12)

In a straight tooth spur gear set has pinion and gear teeth of pressure angle (α) $=20^0$ involute, gear ratio of i= 3:2=1.5 exact, and module (m) = 8 mm. With S correction the centre distance A is175 mm. Keeping the magnitudes of 'i' and 'A' unaltered, find-

5) Teeth number of Pinion and Gear Respectively: *1 point*

a. 18 & 27
b. 16 & 24
c. 14 & 21
d. 20 & 30

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

6) Working pressure angle (α_w) is equal or close to: *1 point*

a. 16° 51' 47"
b. 14° 51' 47"
c. 12° 51' 47"
d. 10° 51' 47"

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

7) The values of inv α_w is equal or close to: *1 point*

a. 0.00798
b. 0.00698
c. 0.00598
d. 0.00498

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

8) The tooth correction factor for pinion is equal or close to: *1 point*

a. -0.1206
b. 0.1806
c. 0.1206
d. -0.1806

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

9) The tooth correction factor for gear is equal or close to: *1 point*

a. -0.6311
b. 0.6311
c. -0.4311
d. 0.4311

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

10) The amount of topping (mm) provided for each gears is equal or close to: *1 point*

a. 0.886
b. 0.786
c. 0.686
d. 0.586

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

11) The addendum or tip diameter (mm) of pinion is equal or close to: *1 point*

a. 158.897
b. 156.897
c. 154.897
d. 152.897

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

12) The addendum diameter (mm) of gear is equal or close to: *1 point*

a. 223.93
b. 221.93
c. 227.93
d. 225.93

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

DATA: (For questions 13 to 20)

In an internal gear drive the ring gear and the pinion have 100 teeth and 96 teeth respectively. The teeth are straight standard tooth involute 5 mm module with 30° pressure angle. An amount of '-' 0.1 correction is given to the pinion only. However, the centre distance is kept as it is in uncorrected gear. Also, the addendum factors (with respect to uncorrected gear and pinion) are 0.8 for both. Then estimate the followings:

13) The values of backlash (mm) provided is equal or close to: *1 point*

a. 0.47735
b. 0.67735
c. 0.77735
d. 0.57735

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

14) Pinion tooth thickness (mm) at pitch circle is equal or close to: *1 point*

a. 5.28
b. 7.28
c. 6.28
d. 8.28

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

15) Pressure angle at tooth tip of pinion is equal or close to: *1 point*

a. 31° 35' 20"
b. 33° 35' 20"
c. 35° 35' 20"
d. 37° 35' 20"

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

16) Pinion tooth tip thickness (mm) is equal or close to: *1 point*

a. 1.588
b. 3.588
c. 2.588
d. 4.588

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

17) At ring gear tooth thickness (mm) at pitch circle is equal or close to: *1 point*

a. 7.754
b. 7.654
c. 7.954
d. 7.854

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

18) Pressure angle at tooth tip of ring gear is equal or close to: *1 point*

a. 29° 20' 41"
b. 28° 20' 41"
c. 31° 20' 41"
d. 30° 20' 41"

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

19) Ring gear tooth tip thickness (mm) is equal or close to: *1 point*

a. 3.296,
b. 2.296
c. 5.296
d. 4.296,

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

20) Contact ratio for this internal gearing is equal or close to: *1 point*

a. 1.135
b. 1.105
c. 2.195
d. 1.175

- a.
- b.
- c.
- d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.