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Courses » Spur and Helical Gear Cutting

Announcements

Course

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## Unit 2 - Week 1

### Course outline

#### How to access the portal

#### Week 1

- Lecture 1: Introduction
- Lecture 2: Simple Gear Calculations
- Lecture 3 : Gear Geometry
- Lecture 4: Helical Gear Problems
- Lecture 5: Numerical Problem MCQ
- Quiz : Week 1 Assignment 1
- Images of different types of gear
- Week 1 : Assignment Solution
- Week 1 : Assignment Solution
- Feedback for Week 1

#### Week 2

#### Week 3

#### Week 4

Correct answers to the exam questions

### Week 1 Assignment 1

The due date for submitting this assignment has passed.

**Due on 2017-08-07, 23:59 IST.**

#### Submitted assignment

1) **Two straight spur gears which have the same pitch diameter, must have**

1 point

- Option a : Same module
- Option b : Same number of teeth
- Option c : Same width
- Option d : None of the others

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Option d : None of the others*

2) **There is a screw with pitch equal to 4 mm and lead equal to 8 mm. A nut is mounted on the screw. Nut is free to translate along axis of screw but cannot rotate. The screw can rotate but is not allowed to translate along axis. In that case, for one rotation of the screw, the nut will suffer an axial translation nearest to**

1 point

- Option a : 2 mm
- Option b : 4 mm
- Option c : 8 mm
- Option d : None of the others

**No, the answer is incorrect.**

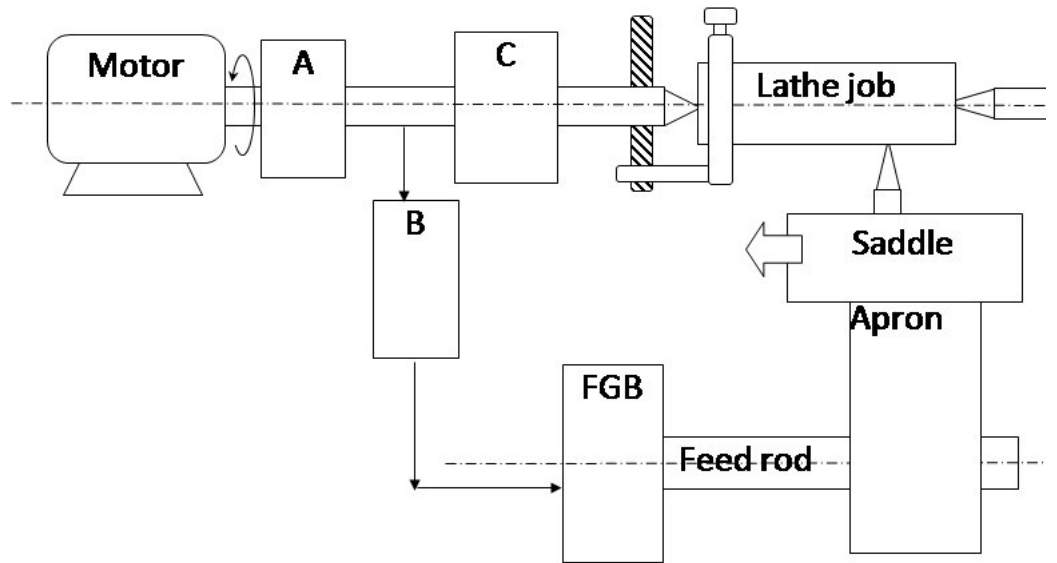
**Score: 0**

**Accepted Answers:**

*Option c : 8 mm*

3) **In the following figure – the is shown, set up for thread cutting. Feed of the lathe is in mm/rev and cutting speed is in m/min. FGB = feed gear box. The correct position of the SPEED GEAR BOX is given by**

1 point



- Option a : C
- Option b : B
- Option c : A
- Option d : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option c : A

4) If the diametral pitch (or module) of two gears be the same

1 point

- Option a : They would have same pitch diameter
- Option b : They would have the same total depth of teeth
- Option c : They would have same number of teeth
- Option d : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option b : They would have the same total depth of teeth

5) During turning on the lathe, machining time can be halved while retaining same surface finish if

1 point

- Option a : Speed gear box ratio is doubled
- Option b : Feed gear box ratio is doubled
- Option c : Feed & speed gearbox ratios are both doubled
- Option d : None of the others

No, the answer is incorrect.

Score: 0

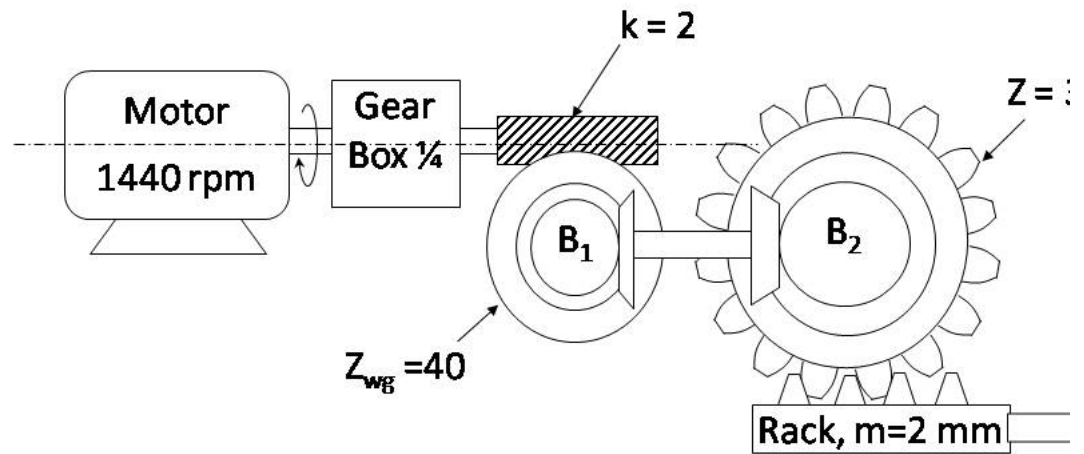
Accepted Answers:

Option a : Speed gear box ratio is doubled

6) Given, for Bevel gear pair B1, driver rpm/driven rpm = 1:1 ; for Bevel gear pair B2, driver rpm/driven rpm =

1 point

1/1.2 .In that case, the speed in mm/min of the rack is nearest to



- Option a : 200 mm/min
- Option b : 529.12 mm/min
- Option c : 4071 mm/min
- Option d : 5233 mm/min

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Option c : 4071 mm/min

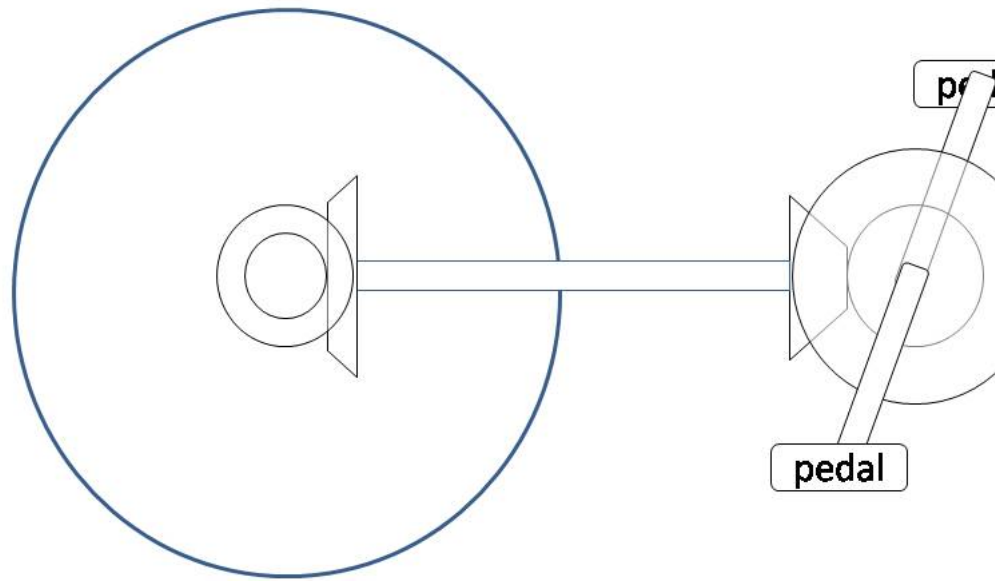
7) A gear has the specification : normal module,  $m_n = 2.5$  mm, number of teeth = 100, helix angle =  $15^\circ$ . The 1 point  
OUTSIDE diameter of such a gear would be nearest to

- Option a : 250 mm
- Option b : 258.81
- Option c : 263.81
- Option d : None of the others

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Option c : 263.81

8) An innovator makes a bicycle driven through bevel gear pairs instead of chain and sprocket. The normal 1 point  
pedaling speed is one complete pedal shaft rotation per second. Both the bevel gear pairs have driver/driven rpm ratio as  $\frac{1}{2}$  (half). If the diameters of the wheels of the bicycle be 500 mm, the speed of the bicycle would be nearest to (in km per hour)



- Option a : 30.25 km/hr
- Option b : 57.12 km/hr
- Option c : 22.6 km/hr
- Option d : 477 km/hr

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option c : 22.6 km/hr

9) A company has designed one equipment in which there is a 4-module spur gear pair with 200 and 100 teeth respectively. However, such a gear pair is not available. A substitute pair, having same centre distance and speed ratio, can be

- Option a : 4-module spur gear pair with 400 and 200 teeth respectively
- Option b : 2-module spur gear pair with 200 and 100 teeth respectively
- Option c : 4 module spur gear pair with 100 and 200 teeth respectively
- Option d : 2-module spur gear pair with 400 and 200 teeth respectively
- Option e : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option d : 2-module spur gear pair with 400 and 200 teeth respectively

10) The whole depth of teeth of a straight tooth spur gear is  $2.25 \times \text{Module}$ . If the pitch diameter is 250 mm, module = 2.5, the outside diameter of the gear would be nearest to

- Option a : 2 mm
- Option b : 255 mm
- Option c : 230 mm
- Option d : None of the others

No, the answer is incorrect.


Score: 0

Accepted Answers:

Option b : 255 mm

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