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Courses » Spur and Helical Gear Cutting

Announcements

Course

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Unit 4 - Week 3

Course outline

How to access the portal

Week 1

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Week 3

- Lecture 11: Gear Shaping- I
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- Lecture 14: Gear Shaping- IV
- Lecture 15: Gear Hobbing- I
- Quiz : Week 3 Assignment 3
- Gear Shaping machine
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- Week 3 : Assignment Solution
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Week 4

Correct answers to the exam questions

Week 3 Assignment 3

The due date for submitting this assignment has passed.

Due on 2017-08-19, 23:59 IST.

Submitted assignment

1) On the gear shaping machine, if only SPEED GEAR BOX setting is changed

1 point

- Option (a) : Cutting speed changes but number of strokes per minute does not change
- Option (b) : Number of strokes per minute changes but cutting speed does not change
- Option (c) : The length of stroke definitely changes
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (d) : None of the others

2) A machine operator cuts a 3 module 45 teeth straight spur gear on a Fellow's gear shaper. Next, he has to cut a 3 module 40 teeth straight tooth spur gear on the same machine. For this, he has to necessarily change the setting of

1 point

- Option (a) : The speed gear box
- Option (b) : The Index gear box
- Option (c) : The feed gear box
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (b) : The Index gear box

3) In the schematic of a fellow's gear shaper (Fig. 1), the gear boxes U_v (speed gear box), U_i (index gear box) and U_s (feed gear box) should have the following locations respectively

1 point

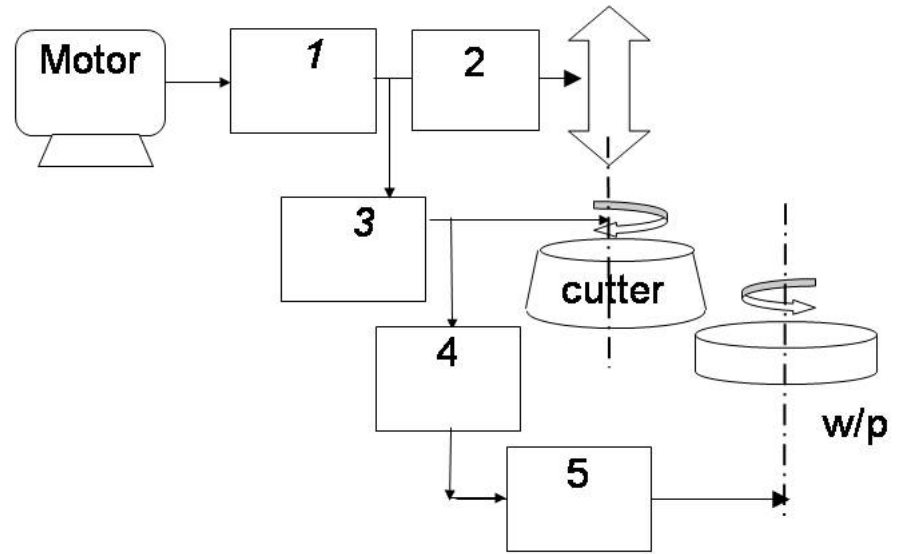


Fig. 1

- Option (a) : 1,2 and 3
- Option (b) : 2, 3 and 4
- Option (c) : 1, 3 and 4
- Option (d) : 3, 4 and 5
- Option (e) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (e) : None of the others

4) In gear shaping, the rpm of the cutter will be affected by change in

1 point

- Option (a) : Speed gear box gear ratio
- Option (b) : Index Gear box gear ratio
- Option (c) : Length of stroke
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (a) : Speed gear box gear ratio

5) In gear shaping, while cutting a 50 teeth straight tooth spur gear, a cutter of 30 teeth gets broken and has to be replaced by a 40 teeth cutter of same module. In that case, in order cut the same gear with same speed and feed

1 point

- Option (a) : Speed gear box and feed gear box ratios both have to be essentially changed
- Option (b) : Speed gear box and index gear box ratios both have to be essentially changed
- Option (c) : Index gear box and feed gear box ratios both have to be essentially changed
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (c) : Index gear box and feed gear box ratios both have to be essentially changed

6) A machine operator has cut a 2 module 34 teeth straight tooth spur gear on a gear shaping machine and now, he has to cut a 2 module 136 teeth straight tooth spur gear on the same machine. If he changes only the ratio of the index gear box U_i and puts in a blank of outside diameter ϕ 276 mm for that purpose

1 point

- Option (a) : The tangential speeds on the pitch circles of the cutter and new blank would not be equal
- Option (b) : The pitch circumferential feed per stroke will change
- Option (c) : None of the others

- Option (d) : The number of strokes will change

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (c) : None of the others

7) A machine operator has cut a 2 module 34 teeth straight tooth spur gear on a gear shaping machine and he has to cut a 3 module 34 teeth straight tooth spur gear now on the same machine at same speed and feed. In that case 1 point

- Option (a) : Nothing needs to be changed, only a blank of outside diameter ϕ 108 mm has to be used
- Option (b) : Blank and cutter both need to be changed
- Option (c) : Only cutter and not blank needs to be changed
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (b) : Blank and cutter both need to be changed

8) For producing a straight tooth spur gear, Fellow's gear shaper machine requires that 1 point

- Option (a) : Only work piece rotate
- Option (b) : Only cutter rotate
- Option (c) : Both cutter and workpiece rotate
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (c) : Both cutter and workpiece rotate

9) In a gear shaper, in order to extend the cut all around the circumference of a straight tooth spur gear blank 1 point

- Option (a) : Simple indexing with universal dividing head is absolutely necessary
- Option (b) : Differential indexing with universal dividing head is absolutely necessary
- Option (c) : Cutter and work piece are made to rotate against each other
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (c) : Cutter and work piece are made to rotate against each other

10) The kinematic chain of mechanism is shown (Fig. 2) for realization of reciprocation in a gear shaper. The block B at the bottom develops reciprocatory motion which is given to the cutter. N_o and N_i mean output rpm and 1 point

input rpm respectively. Here it can be stated that

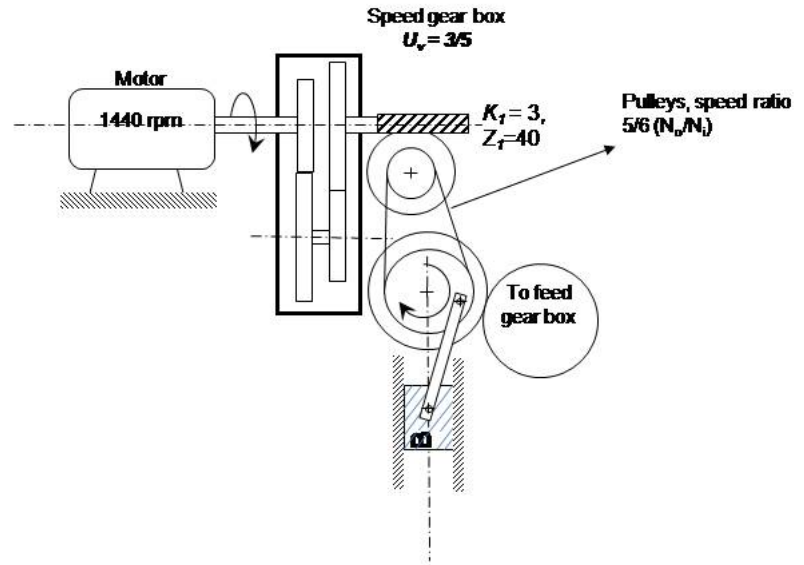


Fig. 2

- Option (a) : The length of stroke will increase with increase in motor rpm
- Option (b) : The block B develops 64 strokes per min
- Option (c) : Change only in Speed gear box ratio changes both number of strokes per min and feed (mm/stroke)
- Option (d) : None of the others

No, the answer is incorrect.

Score: 0

Accepted Answers:

Option (d) : None of the others

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