QUEBEC SCIENCE AND TECHNOLOGY, SECONDARY IV · UNIT E

Technological World - Mechanical Engineering — Practice Test

Quebec Science and Technology, Secondary IV • 25 questions

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A crank and connecting rod system makes one piston stroke per crank turn. In 5 crank turns the piston makes, in strokes**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A driver gear with 20 teeth turns at 60 revolutions per minute and drives a gear with 40 teeth. The driven gear speed, in revolutions per minute, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A driver pulley of diameter 10 centimetres turns at 120 revolutions per minute and drives a pulley of diameter 20 centimetres by belt. The driven pulley speed, in revolutions per minute, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A motion transmission system has input speed 40 revolutions per minute and output speed 120 revolutions per minute. Its speed multiplication factor is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A belt and pulley system transmits motion from one wheel to another. The belt grips the pulley because of**

A magnetic attraction

B electric current

C friction

D air pressure

Understand It with Pulse | Flag a mistake

6 **A belt drive has driver diameter 12 centimetres and driven diameter 36 centimetres. The driven pulley turns slower by a factor of**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A cam transforms rotary motion into**

A electric motion

B chemical motion

C heat motion

D reciprocating motion

Understand It with Pulse | Flag a mistake

8 **A connecting rod joins a crank to a piston and transforms rotary motion into**

A back and forth motion

B melting

C heating

D colouring

Understand It with Pulse | Flag a mistake

9 **A gear assembly with several gears in a row is used to change speed and**

- A torque
- B colour
- C temperature
- D weight

Understand It with Pulse | Flag a mistake

10 **A gear with 40 teeth meshes with a gear with 20 teeth. The ratio of driver teeth to driven teeth, driver 40 and driven 20, expressed as a whole number, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

11 **A guiding control that forces a part to move in a straight line is a**

- A hinge
- B spring
- C slide
- D rivet

Understand It with Pulse | Flag a mistake

12 **A larger driven gear than driver gear gives a**

- A faster output speed
- B slower output speed
- C same speed
- D stopped output

Understand It with Pulse | Flag a mistake

13 **A motion transformation system changes the type of motion, for example rotation into**

- A combustion
- B translation
- C electricity
- D magnetism

Understand It with Pulse | Flag a mistake

14 **A motion transmission system carries motion from one place to another without changing its**

- A speed ever
- B direction ever
- C type
- D force ever

Understand It with Pulse | Flag a mistake

15 **A pulley system with a larger driver than driven pulley gives a**

A slower output

B stopped output

C reversed material

D faster output

Understand It with Pulse | Flag a mistake

16 **A rack and pinion transforms rotary motion into**

A circular motion only

B linear motion

C heat

D sound

Understand It with Pulse | Flag a mistake

17 **A rotating slider crank mechanism is found in a piston**

A engine

B toaster

C lamp

D battery

Understand It with Pulse | Flag a mistake

18 **A crank and connecting rod system makes one piston stroke per crank turn. In 8 crank turns the piston makes, in strokes**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **A driver gear with 30 teeth turns at 90 revolutions per minute and drives a gear with 45 teeth. The driven gear speed, in revolutions per minute, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

20 **A driver pulley of diameter 15 centimetres turns at 90 revolutions per minute and drives a pulley of diameter 30 centimetres by belt. The driven pulley speed, in revolutions per minute, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **A motion transmission system has input speed 30 revolutions per minute and output speed 90 revolutions per minute. Its speed multiplication factor is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **A crank and connecting rod system makes one piston stroke per crank turn. In 12 crank turns the piston makes, in strokes**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **A driver gear with 24 teeth turns at 120 revolutions per minute and drives a gear with 48 teeth. The driven gear speed, in revolutions per minute, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

24 **A driver pulley of diameter 8 centimetres turns at 200 revolutions per minute and drives a pulley of diameter 40 centimetres by belt. The driven pulley speed, in revolutions per minute, is**

ANSWER

Understand It with Pulse | Flag a mistake

25 **A motion transmission system has input speed 50 revolutions per minute and output speed 150 revolutions per minute. Its speed multiplication factor is**

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	5	**10.**	2	**19.**	60
2.	30	**11.**	C	**20.**	45
3.	60	**12.**	B	**21.**	3
4.	3	**13.**	B	**22.**	12
5.	C	**14.**	C	**23.**	60
6.	3	**15.**	D	**24.**	40
7.	D	**16.**	B	**25.**	3
8.	A	**17.**	A		
9.	A	**18.**	8		

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