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Previous Year Paper
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भारत सरकार :: अंतरिक्ष विभाग
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Indian Space Research Organisation

U.R. RAO SATELLITE CENTRE
Bengaluru

इसरो ISRO

Participant ID	
Participant Name	
Test Center Name	
Test Date	03/11/2022
Test Time	12:00 PM - 1:30 PM
Subject	TECHNICIAN B(MACHINIST) Post Code 010

Section : **TECHNICIAN-B (MACHINIST) Post Code-010-1**

Q.1

Which of the following instruments would be best suited for flatness measurement?

a. Dial indicators
b. Micrometers
c. Bevel gauge
d. Vernier height gauge

Ans ✔ A. a

✘ B. b

✘ C. c

✘ D. d

Question ID : **1703221878**
Status : **Answered**
Chosen Option : **A**

Q.2

Following G-code, **G02** describes

a. Rapid positioning
b. Circular interpolation clockwise
c. circular threading clockwise
d. Drilling cycle

Ans ✘ A. a

✔ B. b

✘ C. c

✘ D. d

Question ID : **1703221887**
Status : **Answered**
Chosen Option : **A**

Q.3   The process of enlarging the end of an existing hole to accommodate the head of the socket screw is called as:

a.   Spot facing
b.   Boring
c.   Counter boring
d.   Counter sinking

Ans   ✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : **1703221897**
Status : **Answered**
Chosen Option : **D**

Q.4   Quick return mechanism in a planar is necessary to:

a.   Have a smooth surface
b.   Avoid dulling of the tool point
c.   Reduce operation time
d.   Increase operation time

Ans   ✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : **1703221871**
Status : **Answered**
Chosen Option : **C**

Q.5   When steel is heated in a furnace and then cooled in air at room temperature, the process is called

a.   Annealing
b.   Hardening
c.   Normalizing
d.   Tempering

Ans   ✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : **1703221889**
Status : **Answered**
Chosen Option : **A**

Q.6

Which of the following is an artificial abrasive material used in a grinding wheel?

   a.   Corundum
   b.   Diamonds
   c.   Silicon carbide
   d.   Sandstone

Ans ✗ A. a

      ✗ B. b

      ✓ C. c

      ✗ D. d

Question ID : **1703221894**
Status : **Answered**
Chosen Option : **C**

Q.7

The point angle of a scriber is:

   a. 30^0
   b. 60^0
   c. 5^0 to 10^0
   d. 12^0 to 15^0

Ans ✗ A. a

      ✗ B. b

      ✗ C. c

      ✓ D. d

Question ID : **1703221881**
Status : **Answered**
Chosen Option : **D**

Q.8

Quality control allows at the most 0.6% defective parts. How many defective parts can be allowed in a production of 1000 parts?

   a.   60
   b.   6
   c.   600
   d.   10

Ans ✗ A. a

      ✓ B. b

      ✗ C. c

      ✗ D. d

Question ID : **1703221861**
Status : **Answered**
Chosen Option : **B**

Q.9   **V-Block usually has an angle of:**

    a. 30^0
    b. 60^0
    c. 90^0
    d. 120^0

Ans   ✗ A. a

    ✗ B. b

    ✔ C. c

    ✗ D. d

Question ID : **1703221880**
Status : **Answered**
Chosen Option : **C**

Q.10   **Abrading process by which finishing of round holes carried out using bonded abrasive stone is called**
    a.   Turning
    b.   Broaching
    c.   Planing
    d.   Honing

Ans   ✗ A. a

    ✗ B. b

    ✗ C. c

    ✔ D. d

Question ID : **1703221865**
Status : **Answered**
Chosen Option : **D**

Q.11   **The length of hacksaw blade is measured from:**

    a.   One end of the toothed portion to the other end
    b.   Center of one pin hole to the center of other pin hole
    c.   End to end of the blade
    d.   End of one hole to the end of the other pin hole

Ans   ✗ A. a

    ✔ B. b

    ✗ C. c

    ✗ D. d

Question ID : **1703221893**
Status : **Answered**
Chosen Option : **B**

Q.12   Which of the following forging process represents an increase in the cross-sectional area and reduction in length?

a.   Drawing down
b.   Punching
c.   Upsetting
d.   Setting down

Ans   ✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : **1703221899**
Status : **Answered**
Chosen Option : **C**

**Q.13**   Spot facing is done to:

a.   Deburr the mouth of the drilled hole
b.   Make surface flat so that the bolt head can take proper seat on the surface
c.   Give finish to the drilled hole
d.   Enlarge the existing hole

Ans   ✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703221895**
Status : **Answered**
Chosen Option : **B**

Q.14 **Identify the marked 'X' in the following gear terminology?**

'X'
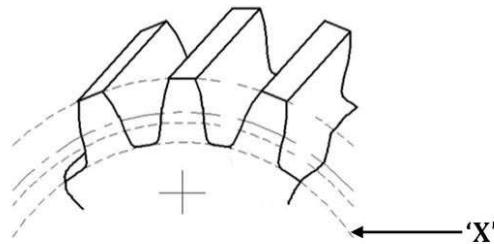
    a.   Clearance circle
    b.   Dedendum circle
    c.   Pitch circle
    d.   Addendum circle

Ans ✗ A. a

    ✓ B. b

    ✗ C. c

    ✗ D. d

Question ID : **1703221872**
Status : **Answered**
Chosen Option : **B**

Q.15 **'Snagging' is a process used to remove material by:**

    a.   Filing
    b.   Hack-sawing
    c.   Chipping
    d.   Grinding

Ans ✗ A. a

    ✗ B. b

    ✗ C. c

    ✓ D. d

Question ID : **1703221892**
Status : **Answered**
Chosen Option : **D**

Q.16

What is the property of material by which the original shape is not
returned after the applied force is released?

    a.   Brittleness
    b.   Plasticity
    c.   Elasticity
    d.   Malleability

Ans   ✘ A. a

     ✔ B. b

     ✘ C. c

     ✘ D. d

Question ID :	**1703221876**
Status :	**Answered**
Chosen Option :	**B**

Q.17

The cutting action of the file depends upon?

    a.   The kind of cut and spacing of teeth
    b.   Arrangement of teeth on the file
    c.   Size and shape of the file
    d.   All of the above

Ans   ✘ A. a

     ✘ B. b

     ✘ C. c

     ✔ D. d

Question ID :	**1703221888**
Status :	**Answered**
Chosen Option :	**D**

Q.18

Which of the following is the function of 'flutes' in a twist drill??

    a. Ensure easy escape and flow of chips
    b. Cause the chips to travel and provide passage for their flow
    c. Allowing the cutting fluids to reach the cutting edges
    d. All of the above

Ans   ✘ A. a

     ✘ B. b

     ✘ C. c

     ✔ D. d

Question ID :	**1703221886**
Status :	**Answered**
Chosen Option :	**D**

Q.19   **Which of the following is nominally referred to 'Grinding ratio' of a grinding wheel?**

      a.   G = Volume of material required to be removed / Volume of wheel wear

      b.   G = Volume of wheel wear/ Volume of material required to be removed

      c.   G = Volume of the material required to be removed /Volume of the wheel

      d.   G = Mass of the wheel / Mass of the material required

Ans   ✅ A. a

    ❌ B. b

    ❌ C. c

    ❌ D. d

Question ID : **1703221864**
Status : **Answered**
Chosen Option : **A**

Q.20   **The tool used for laying out large circles is:**

      a.   Trammel

      b.   Divider

      c.   Jenny calipers

      d.   scriber

Ans   ✅ A. a

    ❌ B. b

    ❌ C. c

    ❌ D. d

Question ID : **1703221879**
Status : **Answered**
Chosen Option : **A**

Q.21   **A cutting tool used to enlarge and finish a hole is called as:**

      a.   Drill

      b.   Tap

      c.   Die

      d.   Reamer

Ans   ❌ A. a

    ❌ B. b

    ❌ C. c

    ✅ D. d

Question ID : **1703221883**
Status : **Answered**
Chosen Option : **D**

Q.22   **Which of the following is a transition fit?**

    a.   Sliding fit
    b.   Snug fit
    c.   Driving fit
    d.   Forced fit

Ans ✖ A. a

     ✔ B. b

     ✖ C. c

     ✖ D. d

Question ID : **1703221877**
Status : **Answered**
Chosen Option : **D**

Q.23   **The pointing angle of most common drill bit is**

    a) 116 deg
    b) 122 deg
    c) 120 deg
    d) 118 deg

Ans ✖ A. a

     ✖ B. b

     ✖ C. c

     ✔ D. d

Question ID : **1703221896**
Status : **Answered**
Chosen Option : **D**

Q.24   **Which of these, is used to remove a broken tap:**

    a.   Tap disposer
    b.   Tap wrench
    c.   Tap extractor
    d.   Tap nut

Ans ✖ A. a

     ✖ B. b

     ✔ C. c

     ✖ D. d

Question ID : **1703221885**
Status : **Answered**
Chosen Option : **C**

Q.25 **Which of the following chisels are primarily used to cut keyways:**

    a.   Cape chisel
    b.   Flat chisel
    c.   Round nose chisel
    d.   Diamond point chisel

Ans ✔ A. a

    ✘ B. b

    ✘ C. c

    ✘ D. d

Question ID : **1703221891**
Status : **Answered**
Chosen Option : **A**

Q.26 **Which one of the following coolants is used for reaming aluminum workpiece?**

    a.   Kerosene
    b.   Water
    c.   Air pressure
    d.   Lard oil

Ans ✔ A. a

    ✘ B. b

    ✘ C. c

    ✘ D. d

Question ID : **1703221890**
Status : **Answered**
Chosen Option : **A**

Q.27 **Which of the following milling cutters may be suitable for gear cutting operation?**

    a.   Face milling cutter
    b.   Form relieved cutter
    c.   saw milling cutter
    d.   T-slot milling cutter

Ans ✘ A. a

    ✔ B. b

    ✘ C. c

    ✘ D. d

Question ID : **1703221873**
Status : **Answered**
Chosen Option : **B**

Q.28   **A cutting tool used to cut outside threads is called:**

    a.   Drill
    b.   Reamer
    c.   Die
    d.   Tap

Ans ✘ A. a

     ✘ B. b

     ✔ C. c

     ✘ D. d

Question ID : **1703221884**
Status : **Answered**
Chosen Option : **C**

Q.29   **Which of the following would be the best choice to machine a horizontal flat surface on a large and heavy workpiece?**

    a.   Planing
    b.   Slotting
    c.   Milling
    d.   Shaping

Ans ✔ A. a

     ✘ B. b

     ✘ C. c

     ✘ D. d

Question ID : **1703221862**
Status : **Answered**
Chosen Option : **A**

Q.30   **Slots are provided in angle plate for:**

    a.   Accommodating bolts
    b.   Hanging with hooks
    c.   Reducing weight
    d.   Aligning work

Ans ✔ A. a

     ✘ B. b

     ✘ C. c

     ✘ D. d

Question ID : **1703221882**
Status : **Answered**
Chosen Option : **A**

Q.31   नीचे दर्शाए फाइल (रेती) प्रकार को सही क्रम में जोडिए।

फाइल (रेती)	प्रकार
a.	1. द्वि कट फाइल (डबल कट फाईल)
b.	2. एकल कट फाइल
c.	3. ड्रेडनोट फाइल
d.	4. रास्प कट फाइल
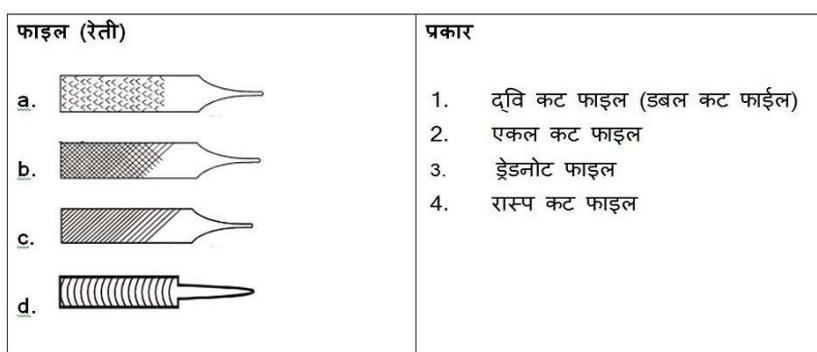
a.   a-2, c-3, b-1, d-4
b.   a-4, b-1, c-2, d-3
c.   a-1, b-4, c-2, d-3
d.   a-3, b-1, c-2, d-4

Ans   ✗ A. a

✔ B. b

✗ C. c

✗ D. d

Question ID : **1703221863**
Status : **Answered**
Chosen Option : **B**

Q.32

What is the pitch circle diameter of a gear wheel having 36 teeth and 3 mm module?
a.   12 mm
b.   75 mm
c.   80 mm
d.   108 mm

Ans   ✗ A. a

✗ B. b

✗ C. c

✔ D. d

Question ID : **1703221900**
Status : **Answered**
Chosen Option : **D**

Q.33 Calculate the time taken to drill hole through a 20 mm thick plate with the drill rotating at 250 rpm and moving at a feed rate of 0.30 mm/rev?

    a.   8 s
    b.   12 s
    c.   16 s
    d.   20 s

Ans ✗ A. a

✗ B. b

✔ C. c

✗ D. d

Question ID : **1703221869**
Status : **Answered**
Chosen Option : **C**

Q.34 In a mechanical shaper, the length of stroke is increased by:

    a.   Increasing the center distance of bull gear and crank pin
    b.   Decreasing the center distance of bull gear and crank pin
    c.   Increasing the length of ram.
    d.   Decreasing the length of slot in the slotted lever.

Ans ✔ A. a

✗ B. b

✗ C. c

✗ D. d

Question ID : **1703221867**
Status : **Answered**
Chosen Option : **A**

Q.35 Which of the following operations *cannot* be done on a slotting machine?

    a.   Keyway slotting
    b.   Dove tail slotting
    c.   Gear cutting
    d.   Thread cutting

Ans ✗ A. a

✗ B. b

✗ C. c

✔ D. d

Question ID : **1703221870**
Status : **Answered**
Chosen Option : **D**

Q.36

**Find the surface speed of the grinding wheel if the diameter of the
grinding wheel is 350 mm (d) and RPM of the spindle is 2500 (N)?**
   a.   31.4 m/s
   b.   45.8 m/s
   c.   30.5 m/s
   d.   38.7 m/s

Ans ✗ A. a

     ✔ B. b

     ✗ C. c

     ✗ D. d

Question ID : **1703221866**
Status : **Answered**
Chosen Option : **B**

Q.37

**If the ratio of forward to return speed in a shaping operation is 6:4,
then what is the ratio of time taken for those motions?**

   a.   10:15
   b.   6:4
   c.   4:7
   d.   10:12

Ans ✔ A. a

     ✗ B. b

     ✗ C. c

     ✗ D. d

Question ID : **1703221898**
Status : **Answered**
Chosen Option : **A**

Q.38

Identify the type of the vice?

   a.   Hand Vice
   b.   Pin Vice
   c.   Swivel vice
   d.   Quick release vice

Ans ✗ A. a

     ✔ B. b

     ✗ C. c

     ✗ D. d
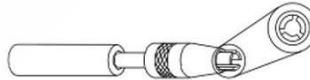
Question ID : **1703221875**
Status : **Answered**
Chosen Option : **B**

Q.39   **Suitable cutting fluid for drilling mild steel plate is:**

     a.   Soluble oil
     b.   Water
     c.   Compressed air
     d.   Dry

Ans ✓ A. a

    ✗ B. b

    ✗ C. c

    ✗ D. d

Question ID : **1703221868**
Status : **Answered**
Chosen Option : **A**

Q.40   **The purpose of rough milling is to:**

     a.   Remove small amounts of materials at high speeds
     b.   To provide rough finish suitable for finishing operation
     c.   To remove excess material in shortest possible time
     d.   To finish the surface rough

Ans ✗ A. a

    ✗ B. b

    ✓ C. c

    ✗ D. d

Question ID : **1703221874**
Status : **Answered**
Chosen Option : **C**

Section : TECHNICIAN-B (MACHINIST) Post Code-010-2

Q.1 $a^m \times a^n = ?$

    a) a^{mn} b) a^{m-n} c) $a^{m/n}$ d) a^{m+n}

Ans ✗ A. a

    ✗ B. b

    ✗ C. c

    ✓ D. d

Question ID : **1703221903**
Status : **Answered**
Chosen Option : **D**

Q.2

Which of the following is prime Number?

a) 20   b) 17   c) 4   d) 10

Ans ✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703221910**

Status : **Answered**

Chosen Option : **B**

Q.3

The value of sin Ө is maximum when, Ө is equal to

a) 0^0 b) 30^0 c) 90^0 d) 45^0

Ans ✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : **1703221905**

Status : **Answered**

Chosen Option : **A**

Q.4

Covert π/4 radian into degree

a)90   b) 45   c) 180   d) 120

Ans ✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703221904**

Status : **Answered**

Chosen Option : **B**

Q.5

The microstructure and physical property of the material can be altered by

a) Milling   b) Heat treating

c) Grinding   d) Turning

Ans   ✗ A. a

         ✔ B. b

         ✗ C. c

         ✗ D. d

Question ID : **1703221914**
Status : **Answered**
Chosen Option : **B**

Q.6

If the side of a square is 'x' then the ratio between the area of a square to perimeter of a square is

a) $x/4$ b) $4x$ c) 4 d) x^2

Ans   ✔ A. a

         ✗ B. b

         ✗ C. c

         ✗ D. d

Question ID : **1703221906**
Status : **Answered**
Chosen Option : **A**

Q.7

एक वायुमंडलीय दाब....... समान है

a) 76 cm of Hg   b) 56 cm Hg   c) 60 cm of Hg   d) 70 cm of Hg

Ans   ✔ A. a

         ✗ B. b

         ✗ C. c

         ✗ D. d

Question ID : **1703221917**
Status : **Answered**
Chosen Option : **A**

Q.8   Add the following term $9a^3 + 8b^3 - c^3 + a^3 - 4b^3 + 3$ and find out the co-efficient of c^3

   a) -1   b) 1   c) 10   d) 3

Ans   ✅ A. a

     ❌ B. b

     ❌ C. c

     ❌ D. d

> Question ID : **1703221902**
> Status : **Answered**
> Chosen Option : **A**

Q.9   The peripheral speed of a car wheel of diameter 300 mm rotating at the speed of 60 RPM, is

   a) 30 π m/s   b) 0.3π m/s   c) 0.6 π m/s   d) 60 π m/s

Ans   ❌ A. a

     ✅ B. b

     ❌ C. c

     ❌ D. d

> Question ID : **1703221913**
> Status : **Answered**
> Chosen Option : **B**

Q.10   गतिशीलता द्वारा इलेक्ट्रो प्रेरक बल की दिशा को ..... द्वारा दिखाया जा सकता है।

   a) बोयल्स नियम   b) चार्ल्स नियम

   c) फ्लेमिंग दायाँ हाथ नियम   d) हुक्स नियम

Ans   ❌ A. a

     ❌ B. b

     ✅ C. c

     ❌ D. d

> Question ID : **1703221918**
> Status : **Answered**
> Chosen Option : **C**

Q.11

If a bus covers a distance of 60 meters in 5 second, then its average speed is?

a) 60.8 km/h b) 36 km/h c) 32.4 km/h d) 43.2 km/h

Ans ✗ A. a

✗ B. b

✗ C. c

✓ D. d

Question ID : **1703221920**
Status : **Answered**
Chosen Option : **D**

Q.12

A body is said to be in equilibrium if the resultant of all the forces & moments acting on a body is

a) Less than zero b) zero

c) More than one d) one

Ans ✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703221915**
Status : **Answered**
Chosen Option : **B**

Q.13

The property of a metal by which it can be drawn out into wire is known as

a) Ductility b) Malleability

c) Brittleness d) Toughness

Ans ✓ A. a

✗ B. b

✗ C. c

✗ D. d

Question ID : **1703221911**
Status : **Answered**
Chosen Option : **A**

Q.14
The length of a rectangle is twice of its width. If the perimeter of the rectangle is 60 cm. Find its area in cm²?

   a) 100   b) 200   c) 150   d) 300

Ans   ✗ A. a

   ✓ B. b

   ✗ C. c

   ✗ D. d

> Question ID : **1703221909**
> Status : **Answered**
> Chosen Option : **B**

Q.15
Nitriding is a process of

   a)   Tempering   b) Annealing

   c)   Quenching   d) Case hardening

Ans   ✗ A. a

   ✗ B. b

   ✗ C. c

   ✓ D. d

> Question ID : **1703221916**
> Status : **Answered**
> Chosen Option : **D**

Q.16
Find the area of an ellipse, if the major and minor axis of an ellipse is 10 cm and 6 cm respectively?

   a) 4π   b) 16π   c) 60π   d) 15π

Ans   ✗ A. a

   ✗ B. b

   ✗ C. c

   ✓ D. d

> Question ID : **1703221908**
> Status : **Answered**
> Chosen Option : **B**

Q.17   The cost price of a bike is Rs 25000 and a dealer gets 6% profit over the cost price of the bike. Find out the selling price of the bike

a)Rs 28000   b) Rs 23500   c) Rs27000   d) Rs 26500

Ans   ✗ A. a

✗ B. b

✗ C. c

✓ D. d

Question ID : **1703221901**
Status : **Answered**
Chosen Option : **D**

Q.18   James can finish a piece of work in 10 days, Akash in 12 days and Prasad in15 days. How many days will they take to finish the work, if all of them work together?

a)5   b) 4   c) 6   d) 8

Ans   ✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703221907**
Status : **Answered**
Chosen Option : **B**

Q.19   The unit of momentum is ……….

a) kg.m/s   b) N.m/s   c) kg.m/s^2 d) N.m/s^2

Ans   ✓ A. a

✗ B. b

✗ C. c

✗ D. d

Question ID : **1703221912**
Status : **Answered**
Chosen Option : **A**

Q.20 निम्नलिखित में से कौनसा स्थायी संतुलन स्थिति की पूर्ति करता है?

a) सपाट क्षैतिज सतह पर अपने नोक पर स्थित शंकु

b) सपाट क्षैतिज सतह पर बॉल

c) सपाट क्षैतिज सतह पर अपने आधार पर स्थित शंकु

d) उत्तल सतह पर बॉल

Ans ✘ A. a

✘ B. b

✔ C. c

✘ D. d

Question ID : **1703221919**
Status : **Answered**
Chosen Option : **C**