

SELF CHECK**Written test**

Sector: Manufacturing

Occupation: MACHINING

Unit of Competence: Perform EDM Plunger and Wire Operations

Code: IND MAC3 06 0217

Name _____ ID. No. _____

I. Choose the best answer from the given choice (2 points each)

1. Wire electric discharge (ED) machining is based on the same principle as that of ____
 - a) hydro-dynamic EDM
 - b) die-sink EDM
 - c) polar EDM
 - d) non-conventional EDM
2. The only difference between die-sink EDM and wire cut EDM is the ____
 - a) way of material removal
 - b) electrode used for the machining
 - c) type of materials machined
 - d) processing time
3. During wire cut EDM, the size of the cavity produced by the wire while machining depends upon ____
 - a) material of the workpiece
 - b) di-electric fluid used
 - c) wire material
 - d) electric current
4. Sparking gap is the distance between ____
 - a) the workpiece and the CNC table
 - b) the workpiece and the electrode wire
 - c) the electrode wire and the di-electric fluid
 - d) the workpiece and the spark plug
5. The absolute minimum inner corner radius is ____
 - a) the wire radius minus the sparking gap width
 - b) the sparking gap width minus the wire radius
 - c) the wire radius plus the sparking gap width
 - d) double of the wire radius
6. The wire ED machines have ____ programmable axes.
 - a) 2
 - b) 2-5
 - c) 6
 - d) 3-9
7. Which of the following component of the wire cut EDM machine does not get heated?
 - a) Workpiece
 - b) Electrode wire
 - c) Di-electric fluid
 - d) Coils

8. Which of the following material properties sets restrictions to use wire cut EDM?
- Material type
 - Melting point
 - Material hardness
 - Electrical conductivity
9. Wires used in wire cut EDM are usually disposed after one usage.
- True
 - False
10. The electrode wires are usually made from _____
- graphite
 - iron
 - nickel
 - brass
11. _____ grades wire are used in automatic re-threading mechanisms.
- Malleable
 - Softer
 - Harder
 - Commercial
12. For machining of high melting point materials, _____ wires are used.
- gallium
 - zinc coated
 - aluminium coated
 - silver
13. _____ is/are used as dielectric fluid in die sink EDM process.
- Pure water
 - Silicone gel
 - Petroleum products
 - Epoxy resins
14. Which of the following is not the application of wire cut EDM process?
- Machining ejector holes
 - Cutting the ejector pins
 - Machining cores of various moulds
 - Machining of complex shapes made of plastic
15. During mould making by wire cut EDM, it is important to harden _____ to counter the effects of changes in the shape of the workpiece due to heat treatment.
- the insert
 - electrode wire
 - electrode holding coils
 - bolting points in the workpiece
16. Which of the following machining process is usually preferred for cutting of ejectors which are used in mould making?
- Milling
 - Hobbing
 - Wire-cut EDM
 - Die sink EDM

17. How many ways are there for making the fixed cores by wire cut EDM process?
- 2
 - 3
 - 4
 - 5
18. The selection of the manufacturing process depends upon _____
- chemical reactivity between the mould material and the di-electric fluid
 - mould shape
 - application of the mould
 - number of parts to be machined
19. The wire EDM process is used for making moulds with high drafted walls.
- True
 - False
20. For manufacturing of complex shapes, soft electrode wires are used.
- True
 - False
21. Which of the following materials is not machined by wire cut EDM?
- Inconel
 - Graphite
 - Tool steel
 - Hastaloy
22. Which of the following does not hold true about wire cut EDM?
- The electrode wire touches the workpiece while cutting the workpiece material
 - It can machine any electrically conductive material irrespective of its hardness
 - The di-electric fluid gets ionized in between the tool-electrode gap
 - During machining, the electrode wire does not get heated
23. Which of the following is true about wire cut EDM?
- Minimal clamping forces are required to hold the workpieces
 - It is a conventional process
 - It can machine materials like fibres, plastics, wood, etc
 - Electrodes used in die sink EDM and wire cut EDM are same
24. Which of the following is true about wire cut EDM?
- It leaves no residual burrs
 - It cannot machine materials having hardness beyond 20 BHN
 - It has poor accuracy as compared to milling
 - It uses petroleum products as di-electric fluid
25. Large scale wire cut EDM machines can handle workpieces weighing upto _____ pounds.
- 100
 - 600
 - 1000
 - 10000

26. Wire cut EDM process can cut tapers of _____ degrees.
- 5-10
 - 8-16
 - 20-30
 - 25-45
27. Wire cut EDM machines work on _____ current.
- direct
 - alternating
 - both direct and alternating
 - eddy
28. The heat of each electrical spark generated during machining is around _____ Fahrenheit
- 1,000° to 2,000°
 - 1,100° to 5,000°
 - 10,000° to 12,000°
 - 15,000° to 21,000°
29. The de-ionised water is used for flush away the burr as well as to cool the workpiece.
- True
 - False
30. In wire cut EDM, machine movement is accomplished with precision lead screws with recirculating ball bearings.
- True
 - False
31. A thin metallic wire used in wire-cut EDM is kept submerged in a tank of _____
- dielectric fluid
 - pure water
 - molten metal
 - kerosene
32. Wire-cut EDM can cut plates of thickness upto _____
- 50mm
 - 100mm
 - 300mm
 - 500mm
33. In WEDM, the wire is held tight between _____
- upper and lower nozzles
 - upper and lower diamond guides
 - upper and lower groves in the handle
 - upper and lower pulleys
34. The upper guide can move independently about _____
- x-axis
 - y-axis
 - x-y-w axes
 - z-u-v axes
35. In the wire-cut EDM process, de-ionizing units are used for controlling the _____
- feed rate
 - resistivity
 - burr formation
 - temperature of the wire

36. In the wire-cut EDM process, water is also used for _____
- a) cooling
 - b) increasing the feed rate
 - c) flushing away the burr
 - d) controlling the cutting speed
37. The WEDM process requires _____
- a) lower initial investment
 - b) lesser cutting forces
 - c) a skilled operator
 - d) a coolant pump
38. The materials which are not stress-relieved before machining by WEDM process can get distorted during machining.
- a) True
 - b) False
39. During the WEDM process, workpiece undergoes a number of thermal cycles.
- a) True
 - b) False
40. Electrically conductive materials are cut by WEDM process by _____ mechanism.
- a) thermal
 - b) electro-thermal
 - c) electro-dynamic
 - d) fused metal

Note: **Satisfactory** rating – 35 points above / **Unsatisfactory** 32 below points
You can ask you teacher for the copy of the correct answers