Part III – Vocational Subjects
(Engineering and Technology Area)

GENERAL MACHINIST
(தமிழ் பதிவு என் கிளை சமூக / Tamil & English Versions)

Time Allowed: 3 Hours

Instructions: (1) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
(2) Use Black or Blue ink to write and underline and pencil to draw diagrams.

 páthu - I / PART - I

I. (A) Choose the correct answer.

1. The first lathe was developed by:

   (a) Henry Maudslay   (b) Eli Whitney
   (c) James Nasmyth   (d) Michael Faraday

Note: Answer all the questions.
2. The assembly which consists of saddle, cross-slide, compound slide and tool post is:

(a) headstock  (b) tailstock
(c) bed  (d) carriage

3. Reamer is a:

(a) multi point cutting tool  (b) single point cutting tool
(c) parting tool  (d) saw teeth cutting tool

4. Drill jigs are used in:

(a) tool room work  (b) producing flat surface
(c) mass production  (d) production of irregular surface
5. The operation mainly done on a shaping machine is:
(a) turning
(b) drilling
(c) machining a flat surface
(d) thread cutting

6. While cutting internal keyways in a shaping machine, the tool is fitted on a special tool holder called:
(a) arbor
(b) snout bar
(c) spindle
(d) collet

7. The cutting tool with several thousands of cutting edges is:
(a) Lathe cutting tool
(b) drill
(c) grinding wheel
(d) milling cutter
8. The heat generated during dry grinding is:
\[(\text{a}) \ 2000^\circ\text{C} \quad (\text{b}) \ 20^\circ\text{C} \]
\[(\text{c}) \ 1000^\circ\text{C} \quad (\text{d}) \ 1200^\circ\text{C}\]

9. The amount of travel of milling machine table is controlled by:
\[(\text{a}) \ \text{saddle} \quad (\text{b}) \ \text{trip dogs} \]
\[(\text{c}) \ \text{cross-slide} \quad (\text{d}) \ \text{elevating screw} \]

10. Side milling is the operation of machining a:
\[(\text{a}) \ \text{angular surface} \quad (\text{b}) \ \text{groove} \]
\[(\text{c}) \ \text{vertical surface} \quad (\text{d}) \ \text{irregular surface} \]

11. Impeller is a part found in a:
\[(\text{a}) \ \text{reciprocating pump} \quad (\text{b}) \ \text{gear pump} \]
\[(\text{c}) \ \text{centrifugal pump} \quad (\text{d}) \ \text{vane pump} \]
12. 5 HP வரை சிலகுறுக்கு கையாணுநிலைச் சுருக்கப்பட்டு பொருள்பாடு உதவிக்கு : 

(a) வட்டத்து பல்கார் துறாக்கி
(b) வழக்கு அலகுத் துறாக்கி
(c) ஆக்பான பல்கார்களாக துறாக்கி
(d) இரு சல்லார் பல்கார்களாக துறாக்கி

Starter used for capacity upto 5 HP is :
(a) Star-delta starter
(b) Direct-on-line starter
(c) Auto-transformer starter
(d) Rotor resistance starter

13. சுமா பரப்பட்டு கருக்குநிலையின் வள்ளல் குழுநிலையின் வள்ளல் ஆக்கின் மனசில் அடைக்கப்படும் :

(a) 16 kg/cm²
(b) 125 kg/cm²
(c) 100 kg/cm²
(d) 14 kg/cm²

The pressure of oxygen in the cylinder of gas welding equipment is :
(a) 16 kg/cm²
(b) 125 kg/cm²
(c) 100 kg/cm²
(d) 14 kg/cm²

14. ஊடையெழுத்து நூல்கள் ________ திறன் பெறும் கிளை குறியாக பார்வை.

(a) நோய்காச்சு
(b) பெண் துணையார்
(c) உயர்நோய்
(d) பெண் மேம்பான

Output channels are found as pins on the :
(a) memory unit
(b) feedback unit
(c) processors
(d) driving devices

15. இருநோய்காச்சின் போக்குக்கட்டளையில் பின்வருமாறு பின்வருமாறு செயல்பாடுகள் கிறித்த ஒழுங்கம் செயல்பாடுகள் பார்வையின் ________ நூறு நாள் விளையாடப்படும்.

(a) பரப்பு
(b) வழக்கு
(c) வழக்குகள்
(d) இருநோய்

The cables and electrical connections of a machine tool should be checked :
(a) weekly
(b) monthly
(c) annually
(d) daily

[ கி.பி /Turn over]
16. What are the types of lathe bedways?

17. Mention a type of mandrel.

18. What type of drilling machine is used to drill in barrels of guns?

19. Mention a method by which drill spindle obtains its drive.

20. What type of cutting tool is used in a shaping machine - a single point cutting tool (or) a multi point cutting tool?

21. Mention any one method by which angular surfaces are machined in a shaping machine.

22. Write any one type of bond used in making a grinding wheel.
23. Name any one type of grinding wheel dresser.

24. Name the part that holds the other end of the arbor in a milling machine.

25. Name the material with which milling cutters are generally made.

26. How is a hydraulic cylinder otherwise known as?

27. Name the windings present in the A.C. Single phase capacitor start motor.

28. Name the flame obtained by supplying more Acetylene than Oxygen.

29. Name any one advancement of NC system.

30. Name a lubricant.
II. Answer any ten questions in one or two lines each.

31. Mention the use of a face plate.

32. What is swing diameter in a lathe?

33. What are the different types of drills?

34. Define - 'cutting speed' in a drilling machine.

35. What is the use of clapper box in a shaping machine?

36. What are the four types of surface grinding machine?

37. What is indexing?

38. What is the principle of a hydraulic pump?
39. What are the safety devices fitted in starters to protect the induction motors?

40. Write any four advantages of gas welding.

41. Name some high level languages used to write NC programs.

42. What are the machine parts that needed to be lubricated?

Answer any five questions in about a page each. Draw diagrams wherever necessary.

43. What are the differences between an engine lathe and a turret lathe?

44. Draw and explain a bench (sensitive) drilling machine.

45. List the various milling machine attachments. Write short notes on any one of them.
46. Explain a lobe pump with a diagram.

47. Draw and explain a D.O.L. starter.

48. What is feedback system in a NC machine tool? Explain its types.

49. Explain ‘routine maintenance’.

**PART - IV**

IV. Answer any four questions in detail. Draw diagrams wherever necessary.

50. Draw and explain the apron mechanism of a Lathe.

51. Explain any four work holding devices used in a drilling machine with suitable diagrams.

52. Draw a neat diagram of a shaping machine and explain its important parts.
53. ఆసిమ్మాట సమయంలో అంచనా యొక్క యుగ్మానికి పాము మంట వాడుక లేదాం.

   Draw and explain an external cylindrical grinder.

54. మేషన్ పాన్ కలెక్సిషన్ నిపుణుడు క్రింద మాత్రమే నిరోధించడం సమస్యలు ప్రతిభతనం లేదాం.

   Explain any four milling cutter holding devices with diagrams.

55. డడిప్పను తొడిగిపెట్టిన మాత్రమే క్రింది మాత్రమే పాము మంట వాడుక.

   Explain any four welded joints with diagrams.