

PART B — (5 × 16 = 80 marks)

11. (a) (i) Write a short note on different tool wear mechanism in metal cutting. (8)
(ii) Write a short note on cutting fluids in metal cutting. (8)

Or

- (b) Write briefly about different cutting tool materials used in metal cutting. (16)
12. (a) Explain with neat sketches the working principle of taper turning operation using a form tool and by swiveling the compound rest. (16)

Or

- (b) (i) State the differences between capstan and turret lathes. (10)
(ii) Write a short note on automatic screw type machines. (6)
13. (a) (i) State the difference between shaper and planer. (10)
(ii) State the difference between horizontal and vertical spindle column and knee type milling machines (use simple sketches). (6)

Or

- (b) (i) Write a short note on BTA deep hole drilling. (8)
(ii) Write briefly about tool and cutter grinder. (8)
14. (a) Explain with simple sketches the working principles and process parameters of honing process. (16)

Or

- (b) Write briefly about broaching machines and its operations with neat sketches. (16)
15. (a) Write briefly about machining centers. (16)

Or

- (b) Write briefly about open loop, closed loop and adaptive control systems in CNC machine tool. (16)