

**GOVERNMENT POLYTECHNIC
SHEOHAR**

DEPARTMENT OF MECHANICAL ENGINEERING

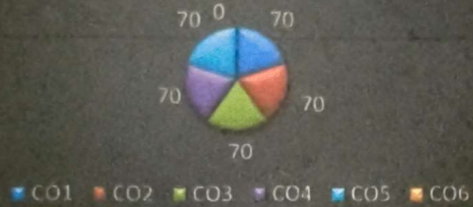
Question bank

**Advance Manufacturing
Engineering and
Cost Estimation-2425405**



CHART BASED ON MCQ AND SUBJECTIVE QUESTIONS

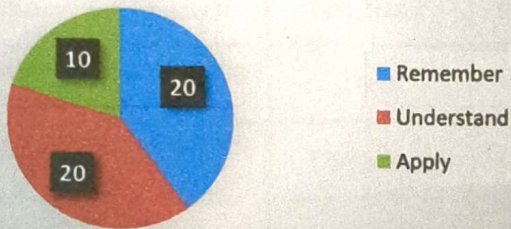
Course outcomes based on manufacturing Engg. Courses



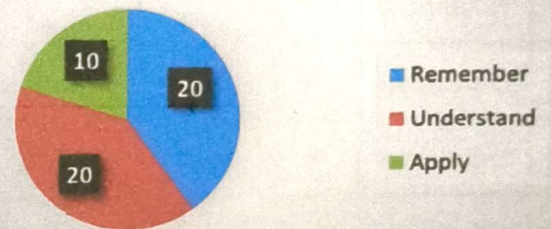
Bloom's Taxonomy based on manufacturing Engg. Courses



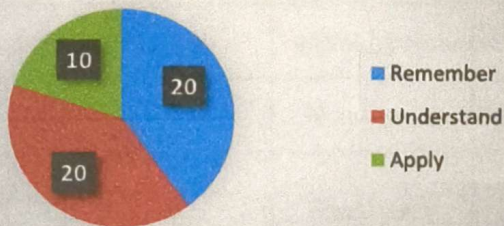
Bloom's Taxonomy based on unit-1



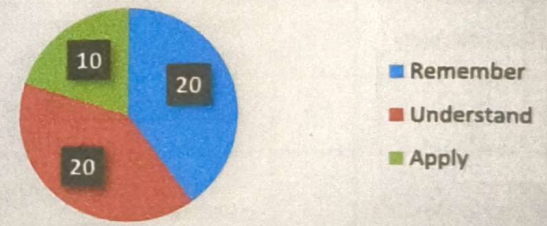
Bloom's Taxonomy based on unit-2



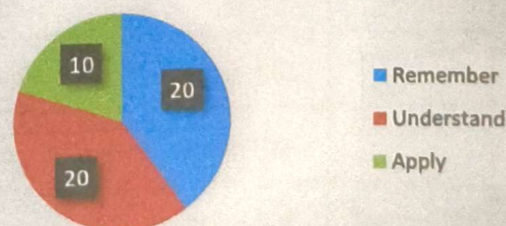
Bloom's Taxonomy based on unit-3



Bloom's Taxonomy based on unit-4



Bloom's Taxonomy based on unit-5



UNIT-1

Question	A	B	C	D	Ans	Bloom	CO
Advanced manufacturing is required mainly due to	Low demand	Complex shapes	Manual labor	Old machines	B	Remember	CO1
Shell moulding uses mould made of	Green sand	Dry sand	Resin coated sand	Clay	C	Remember	CO1
Investment casting is also known as	Sand casting	Lost wax casting	Die casting	Shell casting	B	Remember	CO1
Permanent mould casting uses mould made of	Sand	Ceramic	Metal	Plastic	C	Remember	CO1
Die casting is suitable for	Low melting metals	High melting steels	Ceramics	Plastics	A	Remember	CO1
Vacuum casting is mainly used to reduce	Cost	Oxidation	Time	Weight	B	Remember	CO1
Centrifugal casting is best suited for	Solid blocks	Flat plates	Hollow cylinders	Gears	C	Remember	CO1
Continuous casting is mainly used in	Sheet forming	Welding	Steel production	Machining	C	Remember	CO1
Electron beam welding uses	Gas flame	Electric arc	Electron beam	Laser beam	C	Remember	CO1
Laser beam welding uses energy in form of	Heat	Electric arc	Light	Pressure	C	Remember	CO1
Electro-slag welding is suitable for	Thin plates	Thick sections	Sheets	Foils	B	Remember	CO1
Underwater welding is commonly used in	Automobile	Ship repair	Aerospace	Electronics	B	Remember	CO1
Friction welding is a type of	Fusion welding	Pressure welding	Arc welding	Gas welding	B	Remember	CO1
Forge welding is carried out by	Pressure only	Heat only	Heat and pressure	Electricity	C	Remember	CO1
High energy rate forming uses	Low speed	Manual force	High energy	Hand tools	C	Remember	CO1
Explosive forming uses	Hydraulic force	Magnetic force	Chemical energy	Mechanical force	C	Remember	CO1
Electromagnetic forming is suitable for	Non-metals	Ferrous metals	Conductive metals	Plastics	C	Remember	CO1
Stretch forming is mainly used for	Small parts	Flat sheets	Large curved sheets	Rods	C	Remember	CO1
Contour roll forming produces	Castings	Welds	Rolled sections	Forgings	C	Remember	CO1
Main objective of advanced manufacturing is	Increase labor	Reduce accuracy	Improve productivity	Increase scrap	C	Remember	CO1
Shell moulding provides better surface finish because of	Fine sand	High pressure	Metal mould	Vacuum	A	Understand	CO1
Investment casting is preferred for	Simple shapes	Rough parts	Complex shapes	Large parts	C	Understand	CO1
Die casting gives good dimensional accuracy due to	Sand mould	High pressure	Manual pouring	Gravity	B	Understand	CO1
Vacuum casting improves quality by	Reducing air	Increasing force	Increasing temperature	Cooling fast	A	Understand	CO1

25	Centrifugal casting reduces defects because	Gravity acts	Pressure applied	Impurities move outward	Cooling fast	C	Understand	CO1
26	Continuous casting improves productivity by	Batch process	Continuous flow	Manual handling	High scrap	B	Understand	CO1
27	Electron beam welding is done in vacuum to	Increase speed	Prevent oxidation	Reduce cost	Increase arc	B	Understand	CO1
28	Laser beam welding produces narrow HAZ because of	High heat	Focused energy	Slow speed	Large beam	B	Understand	CO1
29	Electro-slag welding is used for thick sections because	High current	Slow cooling	High deposition rate	Low cost	C	Understand	CO1
30	Friction welding does not require filler material because	Pressure only	Solid-state joining	Melting	Arc formation	B	Understand	CO1
31	Underwater welding faces difficulty due to	Gravity	Water pressure	Poor visibility	Tool wear	C	Understand	CO1
32	High energy rate forming allows forming of	Brittle metals	Thick sections	Large parts	Plastics	C	Understand	CO1
33	Explosive forming is preferred for	Small parts	Large sheets	Micro parts	Rods	B	Understand	CO1
34	Electromagnetic forming is limited to	Non-conductive materials	Conductive materials	Ceramics	Plastics	B	Understand	CO1
35	Stretch forming produces parts with	Uniform thickness	Variable thickness	Cracks	Wrinkles	A	Understand	CO1
36	Contour roll forming is used to produce	Flat plates	Complex sections	Castings	Welds	B	Understand	CO1
37	Advanced manufacturing reduces rejection because of	Automation	Accuracy	Speed	Skill	B	Understand	CO1
38	Modern welding improves joint quality by	Manual skill	Controlled heat	Hammering	Slow cooling	B	Understand	CO1
39	Modern casting methods reduce defects by	Manual control	Controlled parameters	Random cooling	Large mould	B	Understand	CO1
40	Advanced forming methods reduce spring back due to	High speed	High energy	Manual force	Cooling	B	Understand	CO1
41	Best casting process for turbine blades is	Sand casting	Investment casting	Die casting	Shell moulding	B	Apply	CO1
42	Suitable casting method for hollow pipes is	Die casting	Shell moulding	Centrifugal casting	Investment casting	C	Apply	CO1
43	For mass production of aluminium components, use	Sand casting	Die casting	Investment casting	Vacuum casting	B	Apply	CO1
44	For welding thick vertical plates, select	TIG welding	MIG welding	Electro-slag welding	Gas welding	C	Apply	CO1
45	For precision welding with low distortion, choose	Arc welding	Laser beam welding	Gas welding	Forge welding	B	Apply	CO1
46	For joining dissimilar metals without melting, use	Arc welding	Friction welding	Laser welding	Gas welding	B	Apply	CO1
47	For forming large aircraft panels, use	Press forming	Stretch forming	Rolling	Forging	B	Apply	CO1
48	For shaping thick metal sheets with complex shape, use	Rolling	Explosive forming	Extrusion	Casting	B	Apply	CO1

49	For high-speed forming of aluminium sheets, use	Hydraulic press	Mechanical press	Electromagnetic forming	Hammering	C	Apply	CO1
50	To reduce oxidation during casting, best method is	Die casting	Vacuum casting	Sand casting	Shell moulding	B	Apply	CO1
UNIT-2								
1	Non-traditional machining mainly uses	Mechanical energy	Electrical energy	Non-mechanical energy	Human energy	C	Remember	CO2
2	USM stands for	Ultra speed machining	Ultrasonic machining	Universal shaping machine	Ultra smooth machining	B	Remember	CO2
3	WJM uses jet of	Abrasive particles	Water	Air	Oil	B	Remember	CO2
4	EDM removes material by	Cutting	Abrasion	Spark erosion	Chemical action	C	Remember	CO2
5	ECM works on principle of	Spark erosion	Electrolysis	Abrasion	Melting	B	Remember	CO2
6	Dielectric fluid is used in	ECM	USM	EDM	WJM	C	Remember	CO2
7	AJM stands for	Abrasive jet machining	Air jet machining	Arc jet machining	Advanced jet machining	A	Remember	CO2
8	LBM stands for	Laser beam machining	Light beam machining	Linear beam machining	Low beam machining	A	Remember	CO2
9	EBM stands for	Electron beam machining	Electric beam machining	Energy beam machining	Electro beam machining	A	Remember	CO2
10	Chemical machining removes material by	Heat	Abrasion	Chemical reaction	Pressure	C	Remember	CO2
11	USM is suitable for machining	Soft metals	Brittle materials	Plastics	Rubber	B	Remember	CO2
12	EDM can machine	Insulators	Conductive materials	Plastics	Ceramics only	B	Remember	CO2
13	WJM is mainly used for cutting	Hard metals	Brittle materials	Soft materials	All materials	D	Remember	CO2
14	ECM tool wear is	High	Medium	Negligible	Random	C	Remember	CO2
15	Abrasives in USM are generally	Steel	Diamond	Alumina	Sand	C	Remember	CO2
16	LBM is a	Mechanical process	Chemical process	Thermal process	Hydraulic process	C	Remember	CO2
17	EBM is carried out in	Air	Vacuum	Water	Oil	B	Remember	CO2
18	AJM uses abrasive mixed with	Oil	Water	Air	Chemical	C	Remember	CO2
19	Chemical machining is also known as	Etching	Milling	Turning	Grinding	A	Remember	CO2
20	Main advantage of non-traditional machining is	Low accuracy	Tool contact	Machining hard materials	High cost	C	Remember	CO2
21	USM removes material due to	Melting	Abrasion by slurry	Spark	Chemical action	B	Understand	CO2
22	WJM does not produce heat affected zone because	Low speed	Cold process	Abrasives	Pressure	B	Understand	CO2
23	EDM requires dielectric fluid to	Cool tool	Insulate spark gap	Increase speed	Remove chips	B	Understand	CO2

24	ECM produces good surface finish because	No contact	High temperature	High pressure	Abrasives	A	Understand	CO2
25	AJM is suitable for machining	Hard metals	Brittle materials	Soft plastics	Rubber	B	Understand	CO2
26	LBM can machine hard materials because of	High pressure	High energy density	Abrasives	Chemical reaction	B	Understand	CO2
27	EBM produces narrow HAZ due to	Low heat	Vacuum	Focused beam	Cooling	C	Understand	CO2
28	Chemical machining is preferred for	Thick sections	Thin sheets	Heavy components	Large blocks	B	Understand	CO2
29	EDM is not suitable for	Steel	Copper	Plastic	Aluminium	C	Understand	CO2
30	ECM does not produce burrs because	Melting	Electrochemical action	Abrasion	Cutting	B	Understand	CO2
31	USM tool wear occurs due to	Melting	Abrasion	Chemical action	Spark	B	Understand	CO2
32	WJM cutting accuracy depends on	Nozzle diameter	Tool wear	Abrasives	Heat	A	Understand	CO2
33	EDM material removal rate increases with	Lower current	Higher current	Lower voltage	No dielectric	B	Understand	CO2
34	AJM produces good finish because	Low force	Fine abrasives	High speed	Cooling	B	Understand	CO2
35	LBM is used for micro-machining because	Manual control	Focused beam	Low power	Abrasives	B	Understand	CO2
36	ECM requires electrolyte to	Insulate	Conduct current	Cool tool	Remove chips	B	Understand	CO2
37	Chemical machining uses masks to	Increase speed	Protect surface	Reduce cost	Cool part	B	Understand	CO2
38	EBM is expensive because of	Power supply	Vacuum system	Tool wear	Cooling	B	Understand	CO2
39	AJM is not suitable for	Glass	Ceramics	Soft rubber	Silicon	C	Understand	CO2
40	Non-traditional machining improves accuracy due to	Manual skill	Controlled parameters	High force	Tool contact	B	Understand	CO2
41	Best process for machining glass is	EDM	USM	ECM	LBM	B	Apply	CO2
42	Suitable process for cutting rubber sheets is	EDM	USM	WJM	ECM	C	Apply	CO2
43	For machining hard conductive material, select	USM	ECM	EDM	AJM	C	Apply	CO2
44	For burr-free machining of intricate shapes, use	EDM	ECM	WJM	AJM	B	Apply	CO2
45	For micro-hole drilling in metals, use	USM	LBM	WJM	AJM	B	Apply	CO2
46	For machining ceramics with good accuracy, choose	ECM	EDM	USM	WJM	C	Apply	CO2
47	For machining thin sheets without distortion, use	EDM	Chemical machining	ECM	USM	B	Apply	CO2
48	For high MRR in conductive materials, use	USM	AJM	ECM	WJM	C	Apply	CO2
49	For cutting complex profiles in metals, select	Turning	Milling	EDM	Grinding	C	Apply	CO2
50	Best process for stress-free machining is	EDM	USM	ECM	LBM	C	Apply	CO2

UNIT-3

1	Plastics are materials which can be	Welded only	Melted & moulded	Forged	Machined only	B	Remember	CO3
2	Thermoplastics can be	Reheated & reshaped	Used once	Hardened permanently	Welded only	A	Remember	CO3
3	Thermosetting plastics are	Recyclable	Remouldable	Non-remouldable	Flexible	C	Remember	CO3
4	Injection moulding is mainly used for	Metals	Thermoplastics	Ceramics	Rubber	B	Remember	CO3
5	Blow moulding is used to manufacture	Solid rods	Flat sheets	Hollow products	Gears	C	Remember	CO3
6	Compression moulding is mainly used for	Thermoplastics	Thermosets	Metals	Glass	B	Remember	CO3
7	Calendaring process produces	Rods	Sheets	Tubes	Wires	B	Remember	CO3
8	Powder metallurgy starts with	Casting	Powder making	Rolling	Forging	B	Remember	CO3
9	Sintering in powder metallurgy is done	Below melting point	Above melting point	At room temp	With pressure	A	Remember	CO3
10	Infiltration is done to	Increase porosity	Reduce strength	Fill pores	Remove powder	C	Remember	CO3
11	Impregnation improves	Porosity	Lubrication	Brittleness	Shrinkage	B	Remember	CO3
12	Honing is a	Cutting process	Superfinishing process	Casting process	Forming process	B	Remember	CO3
13	Lapping uses	Grinding wheel	Abrasive paste	Cutting tool	Laser	B	Remember	CO3
14	Superfinishing produces	Rough surface	Fine surface	Casting defects	Burrs	B	Remember	CO3
15	Grinding wheel abrasive for steel is	Silicon carbide	Aluminium oxide	Diamond	Emery	B	Remember	CO3
16	Bond in grinding wheel holds	Abrasives	Coolant	Workpiece	Spindle	A	Remember	CO3
17	Dressing of grinding wheel is done to	Balance wheel	Expose grains	Reduce speed	Lubricate	B	Remember	CO3
18	Truing of grinding wheel restores	Shape	Speed	Hardness	Coolant flow	A	Remember	CO3
19	Buffing is mainly used for	Stock removal	Shaping	Polishing	Cutting	C	Remember	CO3
20	Polishing improves	Dimension	Strength	Surface finish	Hardness	C	Remember	CO3
21	Injection moulding is suitable for mass production because of	Low cost	Automation	Manual work	Slow speed	B	Understand	CO3
22	Blow moulding produces hollow items due to	Air pressure	Vacuum	Heat only	Gravity	A	Understand	CO3
23	Compression moulding is preferred for thermosets because	Low temp	Cross-linking	Easy flow	Low pressure	B	Understand	CO3
24	Calendaring gives good surface finish due to	Rolling action	High pressure	Cooling	Vacuum	A	Understand	CO3
25	Powder metallurgy reduces waste because	No chips	Casting	Forging	Grinding	A	Understand	CO3
26	Sintering increases strength due to	Melting	Diffusion bonding	Cooling	Pressure	B	Understand	CO3
27	Impregnation improves bearing performance by	Strength	Lubrication	Hardness	Finish	B	Understand	CO3

28	Honing improves accuracy by	High speed	Controlled abrasion	Heat	Pressure	B	Understand	CO3
29	Lapping gives fine finish due to	Fixed abrasives	Loose abrasives	Cutting edge	Laser	B	Understand	CO3
30	Superfinishing reduces friction because	Smooth surface	High hardness	Coating	Pressure	A	Understand	CO3
31	Aluminium oxide is preferred abrasive for steel because	Soft	Tough	Brittle	Cheap	B	Understand	CO3
32	Silicon carbide is suitable for	Steel	Cast iron & non-ferrous	Soft metals	Rubber	B	Understand	CO3
33	Vitrified bond grinding wheels are used for	High speed	Precision grinding	Rough grinding	Polishing	B	Understand	CO3
34	Glazing of wheel occurs due to	Dull grains	Excess coolant	High speed	Soft bond	A	Understand	CO3
35	Loading of wheel is caused by	Hard material	Soft sticky material	Coolant	Speed	B	Understand	CO3
36	Dressing improves grinding by	Increasing hardness	Exposing sharp grains	Cooling	Speed	B	Understand	CO3
37	Truing ensures	Balance	Correct geometry	Cooling	Lubrication	B	Understand	CO3
38	Buffing is done after polishing because	High speed	Fine finish	Accuracy	Strength	B	Understand	CO3
39	Superfinishing processes are used after	Casting	Rough machining	Heat treatment	Final machining	D	Understand	CO3
40	Plastic processing improves productivity because	Manual work	Fast cycle time	Large tools	High waste	B	Understand	CO3
41	Suitable process for plastic bottle manufacturing is	Injection moulding	Blow moulding	Compression moulding	Calendaring	B	Apply	CO3
42	Best process for manufacturing plastic sheets is	Extrusion	Blow moulding	Calendaring	Injection moulding	C	Apply	CO3
43	For mass production of plastic toys, use	Compression	Injection moulding	Blow moulding	Calendaring	B	Apply	CO3
44	For producing porous bearings, choose	Casting	Powder metallurgy	Forging	Rolling	B	Apply	CO3
45	To improve lubrication in PM bearings, use	Sintering	Infiltration	Impregnation	Compaction	C	Apply	CO3
46	For obtaining very fine surface finish, use	Grinding	Honing	Lapping	Turning	C	Apply	CO3
47	Suitable abrasive for grinding cast iron is	Aluminium oxide	Silicon carbide	Diamond	Emery	B	Apply	CO3
48	To correct shape of grinding wheel, use	Dressing	Truing	Balancing	Glazing	B	Apply	CO3
49	Final finishing operation for decorative items is	Grinding	Honing	Polishing	Buffing	D	Apply	CO3
50	To reduce friction in precision components, use	Casting	Milling	Superfinishing	Forging	C	Apply	CO3
Unit-4								
1	CNC stands for	Computer Network Control	Computer Numerical Control	Central Numerical Control	Computer Node Control	B	Remember	CO4
2	NC machine uses	Manual control	Numerical data	Hydraulic control	Pneumatic control	B	Remember	CO4

3	DNC stands for	Direct Numerical Control	Distributed Network Control	Digital Numerical Control	Data Network Control	A	Remember	CO4
4	Part program is	Drawing	Machining instructions	Tool list	Machine	B	Remember	CO4
5	Main input device of CNC is	Monitor	Keyboard	Mouse	Printer	B	Remember	CO4
6	Automatic Tool Changer is abbreviated as	APC	ATC	CNC	DNC	B	Remember	CO4
7	Feedback device in CNC is	Actuator	Encoder	Clamp	Tool	B	Remember	CO4
8	Recirculating ball screw converts	Rotary to linear motion	Linear to rotary motion	Electrical to mechanical	Heat to work	A	Remember	CO4
9	CNC axis representing vertical movement is	X	Y	Z	A	C	Remember	CO4
10	G-codes are used for	Tool change	Preparatory functions	Spindle control	Coolant	B	Remember	CO4
11	M-codes are used for	Tool path	Auxiliary functions	Feed rate	Interpolation	B	Remember	CO4
12	G00 command is used for	Linear cut	Rapid traverse	Circular cut	Dwell	B	Remember	CO4
13	G01 command is used for	Rapid move	Linear interpolation	Circular interpolation	Tool change	B	Remember	CO4
14	G02 and G03 codes are used for	Linear motion	Circular interpolation	Tool offset	Coolant	B	Remember	CO4
15	Tool length compensation code is	G40	G41	G42	G43	D	Remember	CO4
16	Tool radius compensation left is	G40	G41	G42	G43	B	Remember	CO4
17	Tool radius compensation right is	G40	G41	G42	G43	C	Remember	CO4
18	Canned cycles are used to	Increase time	Simplify programming	Stop machine	Change tool	B	Remember	CO4
19	Macro programming is used for	Repeated operations	Single job	Manual control	Inspection	A	Remember	CO4
20	CAM stands for	Computer Aided Manufacturing	Computer Assisted Machining	Computer Automated Machine	Computer Aided Management	A	Remember	CO4
21	CNC machines give better accuracy because of	Manual skill	Computer control	Operator experience	Tool quality	B	Understand	CO4
22	DNC system is preferred when	Single machine	Many CNC machines	Manual machines	Lathe only	B	Understand	CO4
23	Recirculating ball screws reduce	Accuracy	Friction	Speed	Feed	B	Understand	CO4
24	Encoder is used to	Control speed	Measure position	Hold tool	Clamp job	B	Understand	CO4
25	ATC reduces	Machining time	Accuracy	Speed	Tool life	A	Understand	CO4
26	CNC coordinate system is based on	Right-hand rule	Left-hand rule	Gravity	Rotation	A	Understand	CO4
27	Absolute positioning system uses	Incremental distances	Fixed reference point	Tool path	Feed rate	B	Understand	CO4
28	Incremental positioning system uses	Origin	Previous point	Home position	Axis	B	Understand	CO4

29	Tool presetting improves	Tool life	Setup time	Surface finish	Feed	B	Understand	CO4
30	Qualified tools ensure	Lower accuracy	Consistent positioning	Manual control	More scrap	B	Understand	CO4
31	Tool offset is required because	Tool wear	Different tool lengths	Operator error	Power loss	B	Understand	CO4
32	G41 and G42 are used to	Control feed	Tool radius compensation	Tool length compensation	Coolant	B	Understand	CO4
33	Canned cycles reduce programming by	Repeating blocks	Increasing lines	Manual coding	Changing tools	A	Understand	CO4
34	Macro and subroutines are used to	Increase speed	Reduce repetition	Stop machine	Change tools	B	Understand	CO4
35	CNC turning is suitable for	Prismatic jobs	Cylindrical jobs	Flat surfaces	Drilling	B	Understand	CO4
36	CNC milling is suitable for	Cylindrical jobs	Prismatic jobs	Round shafts	Pipes	B	Understand	CO4
37	Computer assisted programming reduces	Time	Accuracy	Quality	Cost	A	Understand	CO4
38	Compensation is required in CNC due to	Tool wear & errors	Programming	Operator skill	Machine size	A	Understand	CO4
39	Canned cycles are commonly used for	Drilling	Turning	Grinding	Welding	A	Understand	CO4
40	CNC improves productivity mainly due to	Manual control	Automation	Tool wear	Power	B	Understand	CO4
41	Code used for rapid positioning is	G01	G00	G02	G03	B	Apply	CO4
42	Code used for straight cutting is	G00	G01	G02	G03	B	Apply	CO4
43	Code used for clockwise circular interpolation is	G01	G02	G03	G00	B	Apply	CO4
44	To compensate tool radius on left side, use	G40	G41	G42	G43	B	Apply	CO4
45	To compensate tool radius on right side, use	G40	G41	G42	G43	C	Apply	CO4
46	For drilling canned cycle, use	G81	G01	G02	G00	A	Apply	CO4
47	To cancel canned cycle, use	G80	G81	G83	G90	A	Apply	CO4
48	To write part program using absolute system, use	G90	G91	G94	G95	A	Apply	CO4
49	To write part program using incremental system, use	G90	G91	G94	G95	B	Apply	CO4
50	Best CNC machine for prismatic components is	CNC lathe	CNC milling	Drilling	Shaper	B	Apply	CO4

Unit-5

1	SPM stands for	Single Process Machine	Special Purpose Machine	System Production Machine	Standard Process Machine	B	Remember	CO5
2	SPMs are designed for	General use	Specific operation	Manual work	Inspection	B	Remember	CO5
3	Main objective of SPM is	Flexibility	Accuracy	Productivity	Decoratio n	C	Remember	CO5
4	SPM is preferred in	Job production	Mass production	Repair work	Tool room	B	Remember	CO5
5	General purpose machines are	Dedicated	Flexible	Automatic	Costly	B	Remember	CO5

6	Elements of SPM include	Bed & column	Tool, fixture, control	Drawing & design	Operator only	B	Remember	CO5
7	Special purpose lathe is used for	Milling	Drilling	Turning operations	Grinding	C	Remember	CO5
8	Special purpose milling machine performs	Turning	Milling	Casting	Welding	B	Remember	CO5
9	Productivity improvement by SPM is due to	Manual skill	Dedicated tooling	Operator experience	Low speed	B	Remember	CO5
10	Additive manufacturing is also called	Subtractive manufacturing	Formative manufacturing	3D printing	Casting	C	Remember	CO5
11	FDM stands for	Fused Deposition Modelling	Flexible Design Method	Fast Deposition Method	Free Design Modelling	A	Remember	CO5
12	SLA stands for	Selective Laser Alloying	Stereolithography Apparatus	Solid Laser Application	Surface Layer Additive	B	Remember	CO5
13	SLS stands for	Selective Laser Sintering	Surface Layer Shaping	Solid Laser System	Sheet Layer Sintering	A	Remember	CO5
14	CIM stands for	Computer Integrated Manufacturing	Computer Intelligent Machine	Central Industrial Management	Computer Integrated Machine	A	Remember	CO5
15	Group Technology is based on	Part families	Machine tools	Workers	Layout	A	Remember	CO5
16	FMS stands for	Flexible Manufacturing System	Fast Manufacturing System	Fixed Manufacturing System	Full Manufacturing System	A	Remember	CO5
17	Automation is the use of	Manual work	Human control	Automatic control	Inspection	C	Remember	CO5
18	Robot is a	Machine	Automatic device	Programmable manipulator	Tool	C	Remember	CO5
19	Main component of robot is	Chuck	Manipulator	Bed	Spindle	B	Remember	CO5
20	End effector is part of	Controller	Manipulator	Sensor	Power unit	B	Remember	CO5
21	SPM improves productivity mainly by	Increasing labour	Reducing idle time	Increasing cost	Reducing quality	B	Understand	CO5
22	SPM reduces production cost because of	High flexibility	Reduced cycle time	Skilled labour	Manual control	B	Understand	CO5
23	FDM builds parts by	Powder melting	Resin curing	Extruding filament	Laser cutting	C	Understand	CO5
24	SLA uses which energy source	Electron beam	Laser	Electric arc	Flame	B	Understand	CO5
25	SLS produces parts by	Melting powder	Sintering powder	Casting	Forging	B	Understand	CO5
26	Additive manufacturing reduces material waste because	Casting	Layer-by-layer build	Machining	Grinding	B	Understand	CO5
27	CIM integrates	Design & manufacturing	Only machines	Only computers	Only inspection	A	Understand	CO5
28	Group Technology reduces setup time by	Random layout	Cellular layout	Job shop	Process layout	B	Understand	CO5

29	Part family is a group of parts having	Same size	Similar design/process	Same weight	Same colour	B	Understand	CO5
30	FMS increases flexibility by	Manual control	CNC integration	Skilled labour	Low speed	B	Understand	CO5
31	Main element of FMS is	Lathe	CNC machines	Shaper	Drill press	B	Understand	CO5
32	Automation is required to	Increase fatigue	Reduce errors	Increase scrap	Increase labour	B	Understand	CO5
33	Fixed automation is suitable for	Low volume	Medium volume	High volume	Job production	C	Understand	CO5
34	Programmable automation is suitable for	Continuous production	Batch production	Mass production	Single job	B	Understand	CO5
35	Flexible automation allows	No change	Limited change	Quick changeover	Manual change	C	Understand	CO5
36	Robots improve safety by	Increasing speed	Replacing humans in hazardous jobs	Increasing cost	Manual work	B	Understand	CO5
37	Robot sensors are used to	Control speed	Detect environment	Hold tool	Supply power	B	Understand	CO5
38	Robot controller acts as	Brain	Muscle	Sensor	Actuator	A	Understand	CO5
39	SPM is less flexible because	High speed	Dedicated design	Manual work	Automation	B	Understand	CO5
40	CAM trends aim to improve	Manual labour	Integration	Scrap	Cost only	B	Understand	CO5
41	Best machine for repetitive drilling operation is	General drill	CNC drill	SPM	Lathe	C	Apply	CO5
42	For mass production with fixed sequence, choose	Flexible automation	Programmable automation	Fixed automation	Manual system	C	Apply	CO5
43	Suitable 3D printing process for plastic filament is	SLA	SLS	FDM	Casting	C	Apply	CO5
44	For metal powder-based AM, use	FDM	SLA	SLS	Injection moulding	C	Apply	CO5
45	To reduce setup time for similar parts, use	Job shop	GT	Manual layout	Fixed layout	B	Apply	CO5
46	For automated machining with flexibility, choose	SPM	CNC	Manual lathe	Drill	B	Apply	CO5
47	For integrated manufacturing system, select	CAM	CIM	CAD	CNC	B	Apply	CO5
48	Best automation for low volume-high variety is	Fixed	Programmable	Flexible	Manual	C	Apply	CO5
49	For hazardous welding operations, use	Manual welding	CNC	Robot	SPM	C	Apply	CO5
50	To improve productivity with minimum labour, use	Manual system	SPM	Job shop	Repair shop	B	Apply	CO5

Unit-1

Q.
No

Subjective Question

- 1 Define advanced manufacturing processes.
- 2 State the need for advanced manufacturing.
- 3 List modern casting methods.
- 4 Define shell moulding.

Bloom
m

CO

- | | |
|---|-----|
| R | CO1 |
| R | CO1 |
| R | CO1 |
| R | CO1 |

5 Define investment casting.	R	CO1
6 Explain shell moulding process with sketch.	U	CO1
7 Explain investment casting process.	U	CO1
8 Explain die casting and its applications.	U	CO1
9 Explain centrifugal casting.	U	CO1
10 Explain continuous casting.	U	CO1
11 Explain electron beam welding.	U	CO1
12 Explain laser beam welding.	U	CO1
13 Explain electro-slag welding.	U	CO1
14 Explain friction welding.	U	CO1
15 Explain high energy rate forming.	U	CO1
16 Suggest suitable casting process for turbine blades with reason.	A	CO1
17 Select suitable welding process for thick plates and justify.	A	CO1
18 Select suitable forming process for large sheets.	A	CO1
19 Compare modern and conventional casting methods.	A	CO1
20 How do advanced processes improve productivity?	A	CO1

Unit-2

Q. No	Subjective Question	Bloom m	CO
21	Define non-traditional machining.	R	CO2
22	List types of non-traditional machining processes.	R	CO2
23	Define USM.	R	CO2
24	Define EDM.	R	CO2
25	Define ECM.	R	CO2
26	Explain working principle of USM.	U	CO2
27	Explain water jet machining.	U	CO2
28	Explain principle of EDM with sketch.	U	CO2
29	Explain electrochemical machining.	U	CO2
30	Explain laser beam machining.	U	CO2
31	Explain electron beam machining.	U	CO2
32	Explain chemical machining.	U	CO2
33	List process parameters of EDM.	U	CO2
34	List applications of ECM.	U	CO2
35	Compare EDM and ECM.	U	CO2
36	Select suitable process for machining glass and justify.	A	CO2
37	Select suitable process for hard conductive material.	A	CO2
38	Select suitable process for burr-free machining.	A	CO2
39	Select suitable process for micro-hole drilling.	A	CO2
40	Justify use of non-traditional machining for advanced materials.	A	CO2

Unit-3

Q. No	Subjective Question	Bloom m	CO
41	Define plastics.	R	CO3
42	Classify plastics with examples.	R	CO3
43	Define powder metallurgy.	R	CO3
44	List superfinishing processes.	R	CO3
45	Define honing.	R	CO3
46	Explain injection moulding process.	U	CO3
47	Explain blow moulding process.	U	CO3
48	Explain compression moulding.	U	CO3
49	Explain calendaring process.	U	CO3
50	Explain powder metallurgy process.	U	CO3
51	Explain sintering process.	U	CO3
52	Explain impregnation and infiltration.	U	CO3
53	Explain grinding wheel designation.	U	CO3

54 Explain honing process.	U	CO3
55 Explain lapping process.	U	CO3
56 Select suitable plastic process for bottle manufacturing.	A	CO3
57 Select suitable process for porous bearing.	A	CO3
58 Select suitable superfinishing process for high accuracy parts.	A	CO3
59 Select grinding wheel for hardened steel with reason.	A	CO3
60 Explain industrial applications of powder metallurgy.	A	CO3

Unit-4

Q. No	Subjective Question	Bloom	CO
61	Define CNC machine.	R	CO4
62	Define NC and DNC.	R	CO4
63	List advantages of CNC machines.	R	CO4
64	Define part program.	R	CO4
65	Define G-codes and M-codes.	R	CO4
66	Explain basic components of CNC machine.	U	CO4
67	Explain recirculating ball screw.	U	CO4
68	Explain feedback devices used in CNC.	U	CO4
69	Explain CNC coordinate system.	U	CO4
70	Explain tool presetting and tool offset.	U	CO4
71	Explain canned cycles.	U	CO4
72	Explain tool length and radius compensation.	U	CO4
73	Explain structure of CNC part program.	U	CO4
74	Explain CNC turning operation.	U	CO4
75	Explain CNC milling operation.	U	CO4
76	Write simple CNC program for straight turning.	A	CO4
77	Write CNC program for taper turning.	A	CO4
78	Write CNC program using canned cycle for drilling.	A	CO4
79	Compare CNC and conventional machines.	A	CO4
80	Justify use of CNC in mass production.	A	CO4

Unit-5

Q. No	Subjective Question	Bloom	CO
81	Define Special Purpose Machine (SPM).	R	CO5
82	List elements of SPM.	R	CO5
83	Define automation.	R	CO5
84	Define additive manufacturing.	R	CO5
85	Define robot.	R	CO5
86	Explain working of special purpose lathe.	U	CO5
87	Explain productivity improvement by SPM.	U	CO5
88	Explain FDM 3D printing process.	U	CO5
89	Explain SLS 3D printing process.	U	CO5
90	Explain Computer Integrated Manufacturing (CIM).	U	CO5
91	Explain Group Technology concept.	U	CO5
92	Explain Flexible Manufacturing System (FMS).	U	CO5
93	Explain types of automation.	U	CO5
94	Explain components of industrial robot.	U	CO5
95	Explain applications of robots.	U	CO5
96	Select suitable automation for mass production.	A	CO5
97	Select suitable 3D printing process for plastic parts.	A	CO5
98	Select suitable system for integrated manufacturing.	A	CO5
99	Select suitable manufacturing system for high variety-low volume.	A	CO5
100	Justify use of robots in hazardous operations.	A	CO5