Subject Code: KME604

PAPER ID-420400

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM VI) THEORY EXAMINATION 2021-22
TOOL DESIGN

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief.

Q no.	Question	Marks	CO
a.	Define lubrication	2	1
b.	Define rigidity in machine tools.	2	1
c.	Define reliability in machine tools.	2	1
d.	What do you understand by adaptive control systems?	2	5
e.	What is tool?	2	2
f.	List the advantages of jig and fixture.	2	2
g.	Explain importance of die allowance in bending die design.	2	3
h.	Differentiate between jig and fixture.	2	4
i.	Briefly explain modern trends in die-casting dies.	2	4
j.	Explain phenomenon of spring back effect.	2	3

SECTION B

2. Attempt any *three* of the following:

a.	What are drill jig bushes and explain different types of it.	10	1
b.	How does die casting affect material properties?	10	3
c.	Explain the main elements of injection molding.	10	3
d.	Explain the term adaptive control systems.	10	5
e.	Draw the design of speed gear boxes and feed box.	10	2

SECTION C

3. Attempt any *one* part of the following:

a.	Sketch and explain progressive die.	10	3
b.	What causes spring back? With a neat sketch explain, methods of correction to overcome spring back?	10	3

4. Attempt any *one* part of the following:

a.	Sketch and explain milling fixture design procedure.	10	2
b.	What steps would you take in a die casting die design?	10	3

5. Attempt any *one* part of the following:

a.	Explain the general design procedure used in the design of cutting tools.	10	1
b.	What are the steps involved in design of tool? Describe in brief.	10	1

6. Attempt any *one* part of the following:

a.	Explain different types of single point cutting tools.	10	1
b.	Define tool design and list the requirements of tool design objectives.	10	2

7. Attempt any *one* part of the following:

a.	Draw neat sketches, showing the nomenclature of single point cutting tool and explain various tool angles.	10	2
b.	Describe any four methods of ejection used in injection moulding.	10	4

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