Q.27 Classify the design parameters according to mould operations.
Q.28 Describe the concept of core and cavity.
Q.29 Write short note on dimensional tolerances.
Q.30 Describe various data sheet formats.
Q.31 Explain the layout method of cavities.
Q.32 Give the procedure of estimation of machining hours.
Q.33 Write short note on data for machine setup.
Q.34 Explain multi-cavity compression moulding.
Q.35 Explain the method of cost analysis and evaluation.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Calculate the necessary clamping force, if
Cavity pressure (P) = 400kgf/cm^2
Projected area for one cavity (A1) = 16.0cm^2
Projected area for runner (A) = 5.0 cm^2

Q.37 Calculate the Total Projected Area for the Polypropylene container mould, which has a moulding diameter of 70mm at the top, and 50mm at the base, with a height of 48mm. It consists of a hot runner mould tool of 8 impressions. The cavity at the split line has a diameter of 70mm, a cavity depth of 48mm, and a cavity diameter at the base is 50mm. The mould cavity base has a thermal gate in the cenre. The component's wall section is 1.6mm.

Q.38 Write short note on
i) Mould housing
ii) Principle of component geometry

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3rd Year / Branch : Advance Diploma in Tool and Die Making
Subject:- Tool Design Practice-III (Plastic Moulds)

Time : 4Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 The excess material coming out of the compression mould is known as _____
a) Trimmed material b) Flash
c) Cover material d) None of the above

Q.2 _____ is the process of imitation of real world process on computer.
a) Simulation b) Injection analysis
c) Process analysis d) AutoCAD software

Q.3 Which part is used for feeding in injection moulding?
a) Hopper b) Barrel
c) Screw d) All of the above

Q.4 The ratio of the density of a material after molding to the density of the raw material.
a) Bulk factor b) Weight density
c) Mass density d) Factor of safety

Q.5 The Process where compressed air is used to push the uniform thickness plastic sheet against the mold surface using vacuum or pressure to shape the sheet.
a) Thermoforming b) Injection moulding
c) Rotational moulding d) Any of the above

Q.6 The channels through which molten metal flows into the die cavity are called _____

a) Runner b) Sprue
c) Gate d) All of the above

Q.7 The area used to hold firmly the part with other parts is known as

a) Holding area b) Clamping area
c) Flash area d) Parting line

Q.8 A list of the sub-components, sub-assemblies and the quantities of each needed to manufacture an end product is known as _____

a) Raw materials
b) Finished goods
c) Work in Process (WIP)
d) Bill of material

Q.9 _____ = form - punch height + draw - pad height at home position + the minimum thickness of the part being formed

a) Shut height b) Die height
c) Form height d) None of the above

Q.10 _____ is the portion of a cast which forms the external shape.

a) Sprue b) Gating
c) Cavity d) Core

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 _____ are the connected channels that convey the molten metal to different parts of the mould.

Q.12 _____ provide a flow-way in an injection mould to connect the nozzle (of the injection machine) to the each impression.

Q.13 A handbook containing data or statistics for manufacturing processes is known as _____.

Q.14 _____ a polymer that irreversible becomes rigid when heated.

Q.15 Any rubbery material composed of polymers, that are capable of recovering their original shape after being stretched are known as _____.

Q.16 Define bill of materials.

Q.17 _____ is change in volume that occurs during a phase change in a metal's transition from a liquid state to a solid state at the exposed surface.

Q.18 _____ is the time of plastic material in mould that allow things to set, harden and develop traits.

Q.19 _____ is a large diameter channel through which the material enters the mould.

Q.20 _____ is the time lapse between the beginning of an injection cycle and the next one.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain the relation between material and mould.

Q.22 Explain two standard mould parts with diagram.

Q.23 Explain mould bases.

Q.24 Enlist materials for 5 mould parts.

Q.25 Describe various allowances.

Q.26 Explain the working principle of gating.