

ASSIGNMENT

MOULDING AND CASTING SHOP

1. Describe the following tools that are used in foundry shop. What purpose are they used for?
- (a) Trowel (b) Lifter (c) Rammer (d) Strike off bar
(e) Vent rod (f) Draw spike (g) Cope and drag box.
- (Ans)

(a) TROWEL: A trowel consists of a metal blade fitted with a wooden handle. Trowels are employed in order to smooth or sleek over the surface of moulds.



(b) LIFTER: A lifter is a finishing tool used for repairing the mould and finishing mould sand. It is also used for removing loose sand from mould.



LIFTER

(c) RAMMER: It is required for striking the moulding sand mass in the moulding box to pack or compact it uniformly all around the pattern.



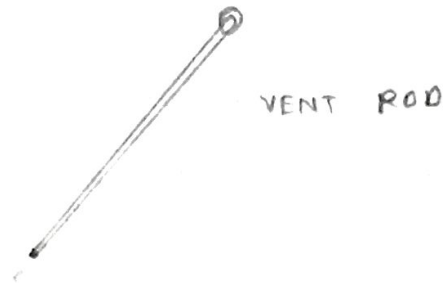
RAMMER

(d) STRIKE OFF BAR: The strike off bar is a piece of metal or wood with a straight edge. It is used to strike off excess sand from the mould after ramming to provide a level surface.



STRIKE OFF
BAR

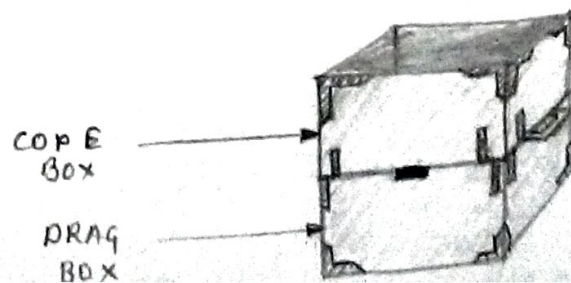
- (e) VENT ROD - A vent rod or wire is a hard straight rod like structure made up of metal iron, with a small rounded handle to hold it. It is used to make a series of small holes to permit gases to ventilate while the molten metal is being poured.



- (f) DRAW SPIKE: The draw spike is a pointed steel rod, with a loop at one end to hold the tool. It is very similar to vent rod. Draw spike is used to rap and draw patterns on sand.



- (g) COPE AND DRAG BOX: Sand moulds are prepared in specially constructed boxes called flask. They are usually made into two parts, held in alignment by dowel pins. The top part is called the cope and the lower part is called drag. The purpose of using cope and drag, commonly called as flask is to impart the necessary rigidity and strength to the sand in moulding.



2. i) Why is sand used for preparing mould?

Ans. It is due to the following features of sand (green)

(i) Percussive

(ii) Flowability

(iii) Refractoriness

(iv) Adhesive as well as cohesive nature

(ii) What are the ingredients that are used for good mould?

Ans - The ingredients that are mixed with sand in order to make it a good mould are :-

Clay (5-20%) + water (2-8%) + Hisc. (2%)

3. Describe the following terms in relation to a mould (a) Runner (b) Riser (c) Vent holes (d) Gate

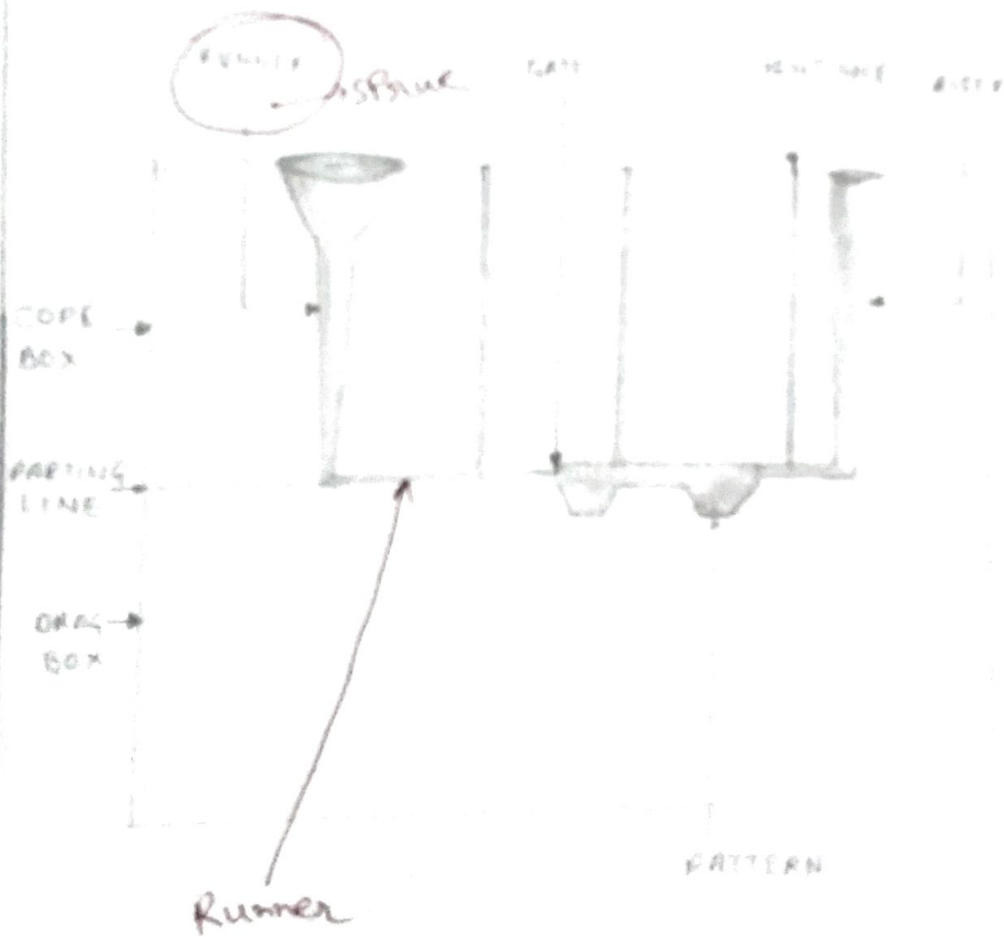
Ans (a) RUNNER - Runner is a channel or path for molten metal to flow through it.

(b) RISER - Reservoir of molten metal from which casting feeds as it shrinks during solidification.

(c) VENT HOLES - Gases are formed during solidification of the metal. Holes are made for the gases to escape instead of harming the structure.

(d) GATE - It is the place of entry of molten metal into the desired structure vacant place.

Q. Draw typical green mould sand and label the following
 (a) cope box (b) Drag box (c) Runners (d) Riser
 (e) Parting line



27/02/17