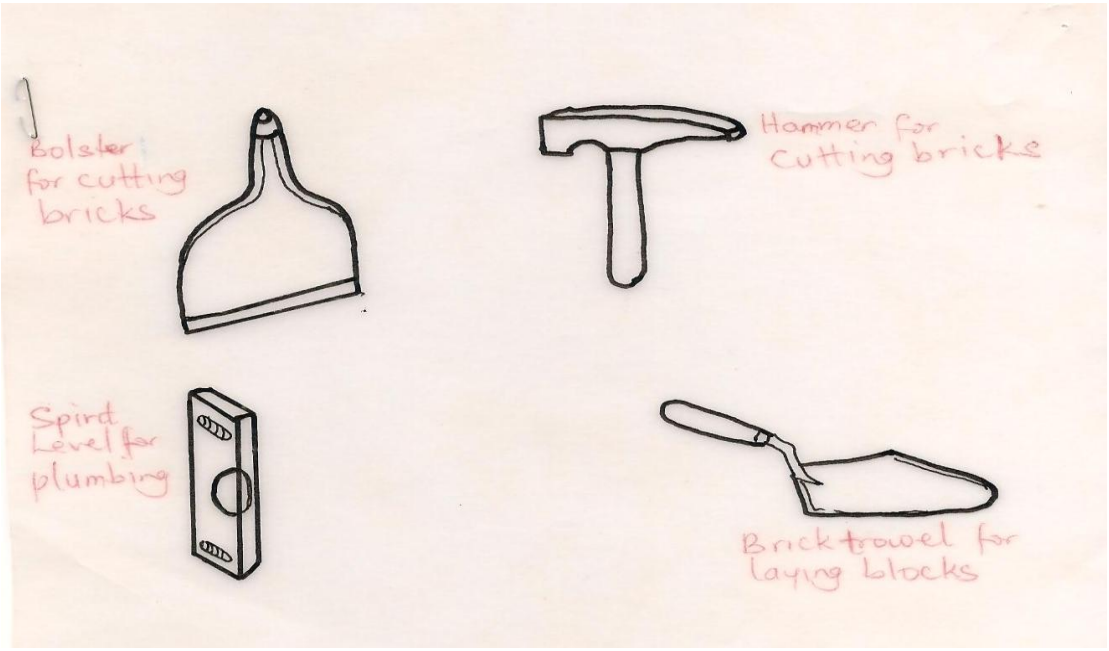
INTRODUCTION TO BUILDING AND CONSTRUCTION (211-2)
PAST QUESTIONS AND MODEL ANSWERS
MAY/JUNE 2008 (211-2)

QUESTION 1

A. With the aid of sketches show the tools used for carrying out the following craft processes
(i) Cutting bricks
(ii) Plumbing walls
(iii) Laying blocks

ANSWER

(i)



B. State six workshop safety rules

ANSWER

(I) Wear goggles or eye shields when using machines which produce dust, chips or shavings.
(II) Remove point or oil from the floor immediately
(III) Store inflammable liquids in sealed containers away from heat and flames.
(IV) Close vice when not in use –handle down.
(V) Do not fight or play in the workshop.
(VI) Don't use faulty equipment in transporting concrete.
(VII) Use lifting appliance to lift heavy materials.
(VIII) Don't carry too many tools or materials at the same time.

QUESTION 2.

A. Define the following terms in relation to timbre
   (i) Seasoning
   (ii) Conversion
   (iii) Preservation

ANSWER:

(i) Seasoning consists of drying out the free water and some of water from the cell walls, which on withdrawal causes the timber to shrink, with the object of reducing the moisture content to a level consistent with the humidity of the air in which the timber will be place.

There are two principal methods of seasoning timber e. g Air seasoning and kiln seasoning.

(ii) Conversion: here, felled tree trucks are cut into logs by sewing off all branches and the logs are sown into timbers of marketable sizes using an axe or saw.

(iii) Preservation: It is a process of protecting timber from decay or insect attack for long periods of time, and in many cases, the length of life can be much increased by applying preservative liquids such as toxic oil, like coal tar creosote, water soluble salts, such as sodium fluoride and magnesium silico fluoride which are cleaner than toxic oils and odourless, and solvent-type of preservation which consist of toxic compounds dissolved in a solvent such as naphtol

B. State two (2) characteristic, each of hardwood and softwood.

ANSWER:

Hard wood:

(i) It is very hard, heavy, and strong difficult to work it resists fungus attack and marine borers.
(ii) Broad leave trees.

Softwood:

(i) It is a straight-grained, coarse and soft, corrodes iron.
(ii) They have needle leaves and are, easy to work on.

QUESTION 3

A. Explain the term setting-out

ANSWER:

Setting-out is usually to establish the building line which demarcates the outer face of the building. The next step will be to position the front of the building on the building line by checking the dimensions between the new building and the side boundaries. Flank walls will then be set out at right angles to the building line often using large builders square or the 3:4:5 method. It is also transferring the shape of the building as contained in the working drawing to the ground .

B.WHAT IS MEANT BY THE FOLLOWING:

(i) Hoarding

(ii) Grubbing

(iii) Site investigation

(iv) Soil investigation

ANSWER

(i) **Hoarding**:- is a temporary fence built round the new site to prevent the public from having a free access, and to safe-guard the structure and materials on site.

(ii) **Grubbing**:- is clearing of the building site, uprooting the trees scraping off of the vegetable soil. It is the preliminary site operation of clearing and leveling of the building site

(iii) **Site investigation**:-Before building operation is commenced on any building site a through examination of site is made to determine its suitability for building and the nature and extent of preliminary work that will be done.

(iv) **Soil investigation**: This is to determine the soil conditions of a particular site on which building is to be erected. This is done (i) By digging several holes about three spits deep with. (ii) Drilling holes up to 2 or 2.5m deep with a hand auger. (iii) Driving a pointed steel bar about 1.5m into the ground for residential building. But for larger houses houses: (i) Trial holes (ii) drilling bore holes and (iii) Load testing are used.

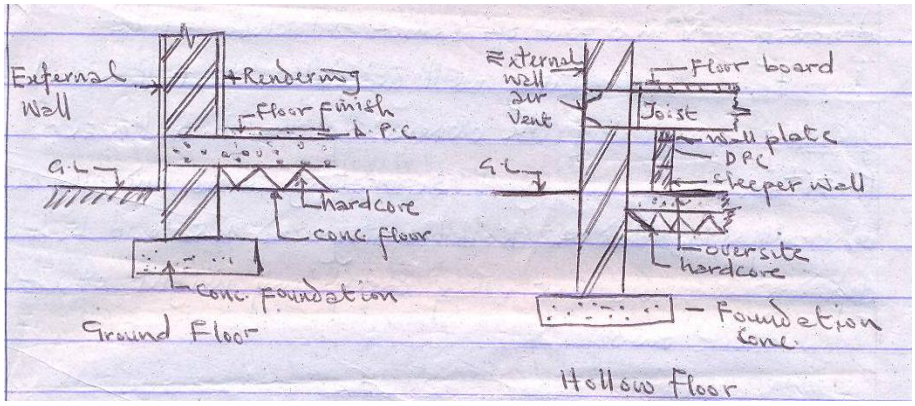
QUESTION 4

A. With the aid of a sketch, show the method of transferring the building line to the foundation concrete

ANSWER

B. Show the difference between a ground floor and hollow floor (use sketches)

ANSWER



QUESTION 5

A. What two advantages do cavity walls have over solid walls?

ANSWER

Advantages of cavity will over solid walls.

(i) When the outer leaf becomes wet, the space prevents water passing from the outer well to the inner wall, and thus the interior of the building remains dry which is not possible with solid walls.

(ii) The space will not allow heat to be transferred from one wall to the other. This arises from the fact that air is a bad conductor of heat and cavity acts as a barrier. The cavity therefore, is a good heat insulator and helps to keep the building cool in summer and warm in winter and this is not possible with solid wall.

B. State the difference between a separation wall and a partitioned wall.

ANSWER

Separation wall is a wall, which separates two dwellings such as in a block of terrace houses or dividing wall in a pair of semi-detached houses. The term separating wall indicates that the wall is jointly owned by the owners of the two houses.

Partition wall is a wall separating rooms and may be generally classified as load bearing and non-load bearing depending on whether they carry any weight other than their own.

C. What is meant by a relieving arch or discharging arch?

ANSWER

Relieving or discharging arch is a form of ringed arch, built over wood/mud and turned on a shaped brick core. It relieves the Intel of any point load and discharges the weight to the abutments.

QUESTION 6

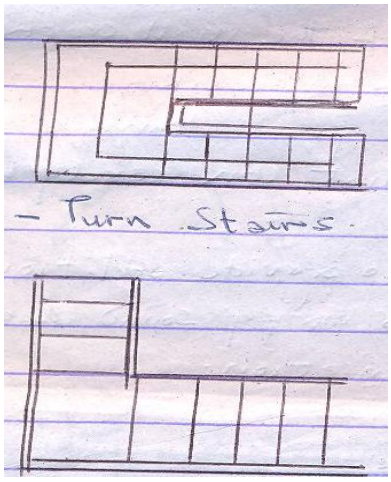
a. Show with sketches the following types of stairs

(i) Half-turn stairs

(ii) Quarter-turn stairs

ANSWER

(i)



b. List six functional requirements of roofs

ANSWER

Functional requirements of roofs

(i) Weather resistance
(ii) Strength
(iii) Durability
(iv) Fire resistance
(v) Insulation
(vi) Appearance
(vii) Sound insulation

QUESTION 7

A. State 3 functions of plaster

ANSWER

(I) It is required to conceal irregularities in the background.
(II) To provide a finish that is smooth
(III) To make the surface of the wall crack free
(IV) It makes the surface hygienic
(V) It protects the surface from damage.
(VI) It provides a surface that can easily be decorated.
(VII) It may also be required to provide additional thermal and sound insulation, to modify sound absorption or mitigate the effect of condensation.

B. List six (6) sanitary fittings

ANSWER

Six sanitary fittings

(i) Double sockets or connecting sockets
(ii) Toper pipe
(iii) Saddle junctions
(iv) Channels
(v) Knuckle bend
(vi) Drain chutes
(vii) Interceptors
(viii) Gully
(ix) Water closet
(x) Wash hand sinks
(xi) Bath
(xii) Shower
(xiii) Biggert