NATIONAL BUSINESS AND TECHNICAL EXAMINATIONS BOARD
NATIONAL CERTIFICATE EXAMINATION
GENERAL WOOD WORK
MAY/JUNE 2005

1(a) Define seasoning in wood work.
Seasoning is the drying out of most of the moisture from the wood, so that the timber is conditioned before use.

(b) State FIVE advantages of seasoning timber.
The Advantages of seasoning timber include:-

i. Further shrinkage, checking and distortion are reduced to minimum
ii. Conditions are less favourable for decay, mould, strain and some insect attack.
iii. The timber is higher in weight, more economical to transport and easier to handle.
iv. Most strength properties are improved with drying.
v. Dry surface will take paints, finishes and adhesive better.
vi. Penetration of preservatives is improved
vii. Corrosion of ferrous metals is reduced.

c(i) Write brief notes on TWO methods of seasoning timber.
Natural method of air season. This is the method whereby the timber is stacked in the open air, where it is dried by the prevailing weather conditions, the temperature, the humidity of the air and the speed of air circulation govern the rate of drying.

The stack is laid on bearers to keep it clear of the ground strips of wood, called stickers are placed between the layers of boards to allow the air to circulate. A water proof covering should be placed over the stack to protect the timber from the sun and the weather.

c(ii) Accelerated method of Kiln seasoning.
Also called artificial seasoning. In the method, the timber is stacked as for air drying, and placed in special drying rooms or ovens called kilns where the temperature, humidity and air circulation can be carefully controlled either manually or automatically from outside the kiln.

2. Write brief notes on the following:

2(i) Knots
Occur when a branch or limb is cut through during the process of conversion, knots reduce the strength of the timber owing to the short or gross grain which surrounds them. Types of knots include line or sound knot, loose or dead knot and spray knot.

(ii) Shakes
A shake is a partial or complete separation (splitting), between adjoining layer of wood, due to causes other than drying. They may be caused by the relief of growing stresses in the tree, or by the impact of the tree with

(iii) Interlocked Grain
This occurs when the fibres at adjacent layers in the growth ring are inclined at different angles to the axis of the timber. The layers are spiral in opposite direction about the axis of the tree.

(iv) Delay
This is the decomposition of the wood due to the action of wood destroying fungi which feed on the cell walls as well as the cell contacts. It is generally called not when the wood is in the more advanced states of decay.

(v) Working of wood
This is the alternation swelling and shrinking which occurs in seasoned changes when the humidity of the atmosphere fluctuates. The timber swells when the air becomes moist and shrinks when the air dries.

3(a) Identify TWO main constituent of finishing materials and explain where each is used.
(i) pigment and
(ii) vehicles

(i) Pigment are used in opaque finishes such as paints, enamels and fillers
(ii) Vehicles are used to bind together and carry the pigments in paints enamels etc and are used as film forming materials in clear finishes

(b) Explain the following finishers terms
(i) Blushing
This refers to the blush, cloudy cast which sometimes appears on the drying lacquer or shellac polish firm. It is caused by moisture being trapped in the film.

(ii) Cutting down
It is the leveling of the last top coat of varnishes, cellulose lackquers and plastic lacquers prior to polishing.

In the white
This is a term that is applied to an item of furniture and pre-fabricated fitments white have been cleaned up neatly for the application of finishing coats.

Printer
This is the first coat of a finishing material applied to a surface to fill and seal the pores and provide a “key” or bond for subsequent coatings such as paints and enamels.

Reducer
A general term applied to a volatile liquid used to dilute or regulate the consistency of a finishing material enabling it to be applied easily by brush or spray gun.

4. Explain the main uses of the following circular saw parts

i. Metre Guage
It is used to guide and hold work when cross cutting and mitring.

ii. Ripping Guage
It is generally used for guiding the stock when ripping boards length wise to the required width and when grooming rebating leveling and hammering.

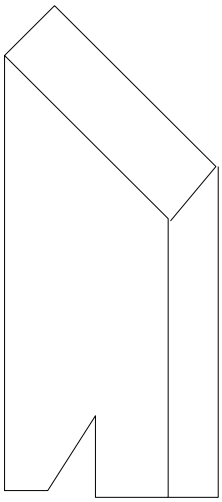
iii. Spitter
The splitting is used to keep the saw kerf open and prevent the work binding on the sides of the blade.

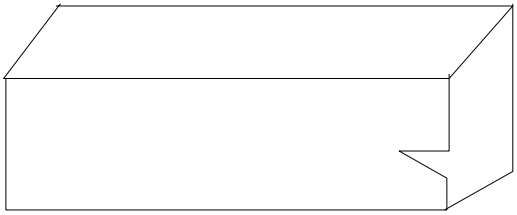
iv. Safety Guard
They are provided on all saws to prevent accident contact with the saw blade. It also prevents the teeth picking up the wood and kicking it back at the operator.

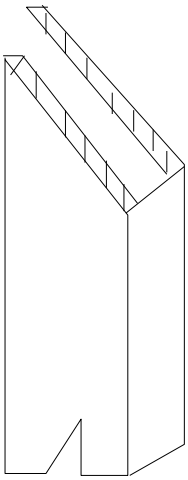
Throat plate
It permits the changing of saw blades and for the use of thick grooving blades and moulding heads.

5. Show by neat exploded sketches the different between the following joints

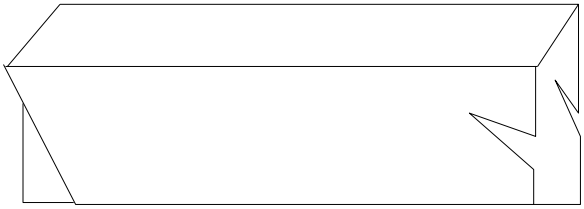
Plain mitred Joint







Mitred Briddle joint



Mitred Halving joint