LEAVING CERTIFICATE MENU

Scéimeanna Marcála — *Scrúduithe Ardteistiméireachta, 2000*

Staidéar Foirgniochta — *Gnáthleibhéal*

Marking Scheme — *Leaving Certificate Examination, 2000*

Construction Studies — *Ordinary Level*

LEAVING CERTIFICATE MENU

An Roinn Oideachais & Eolaíochta
DEPARTMENT OF EDUCATION & SCIENCE

SCRÚDÚ ARDTEISTIMÉIREACHTA 2000

LEAVING CERTIFICATE 2000

STAIDÉAR FOIRGNÍOCHTA - GNÁTHLEIBHÉAL

CONSTRUCTION STUDIES - ORDINARY LEVEL

MARKING SCHEME

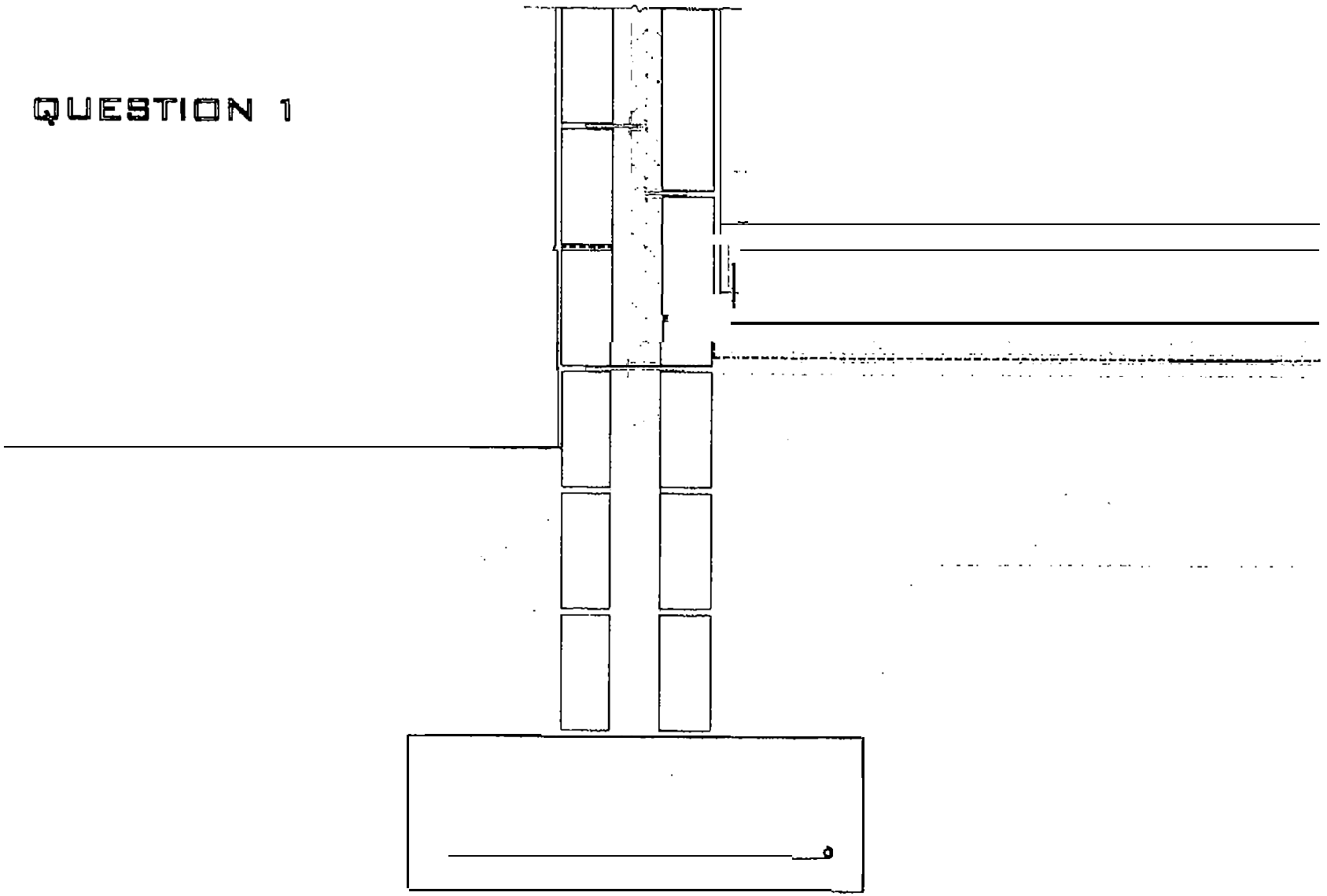
Q1.

Marks

FOUNDATIONS	4
CAVITY WALL	4
CAVITY FILL	4
HARDCORE (MIN 150 MM)	4
BLINDING (30 MM)	4
D.P.M. (1000 GAUGE)	4
INSULATION (60 MM)	4
EDGE INSULATION (25 MM)	4
CONCRETE & SCREED	4
SKIRTING BOARD	4
RENDERING (INSIDE & OUTSIDE)	4
CAVITY INSULATION (60 MM)	4
D.P.C.	4
TIE BAR	4
BACKFILL	4
PRESENTATION & DRAUGHTING	6

	Marks
11 x 4	44
1 x 6	6

QUESTION 1



Q2.

Any two valid points per heading and may include the following:

(i) **Location Map**:

- Location of site.
- Adjoining Developments.
- Distinct Landmarks.
- Outline of site in Red.
- Scale 1: 2500

2 x 5 = 10

(ii) **Site Plan**:

- Boundary of site
- Site entrance.
- Drainage details.
- Water supply.
- Proposed position of structures on the site.
- Scale 1: 500

2 x 5 = 10

(iii) **Planning Permission:**

- This is whelp an application is madr to a Planning Authority for permission to carry out development on a site.
- In rural areas the application is made to The County Council.
- In urban areas the application is made to The Urban District Council.
- In cities tbe application is made to the Corporation.

There are 3 types of Planning Application which can be made

- Outline
- Approval
- Full Permission.

2 x 5 = 10

(iv) **Profiles**:

- Used to set out foundations.
- Set up at corners and wall intersections.
- Bawds 100 x 25 fixed to SO x 50 posts.
- Saw cuts or nails to show widths

2 x 5 = 10

(v) **Excavation:**

- To remove earth for construction of a building.
- Removal of top soil or oversite excavation.
- Reduce level, may comprise of cut & fill. Tbe level to which ground is reduced is called formation level.
- Trench excavation, consists of narrow trenches for foundations or services.
- Excavation of isolated pits for columns or piers.

2 x 5 = 10

(vi) **Levels:**

- Datum point or datum level.
- Floor level.
- Foundation level.
- Water table level.

2 x 5 = 10

Any five to be attempted

Q3.

Marks

CAVITY WALL 300 ---------- 4

INSULATION 60 ---------- 4

D.P.C. ---------- 4

JOIST BUILT IN OR HANGER OR OTHER ---------- 4

FIRRING PIECE 1: 40 ---------- 4

DECKING 19 ---------- 4

SHEATHING FELT ---------- 4

ASPHALT ---------- 4

ANGLE FILLET ---------- 4

UPSTAND ---------- 4

FLASHING ---------- 4

CEILING PLASTERSLAB 1/2 HR FIRE RATING ---------- 4

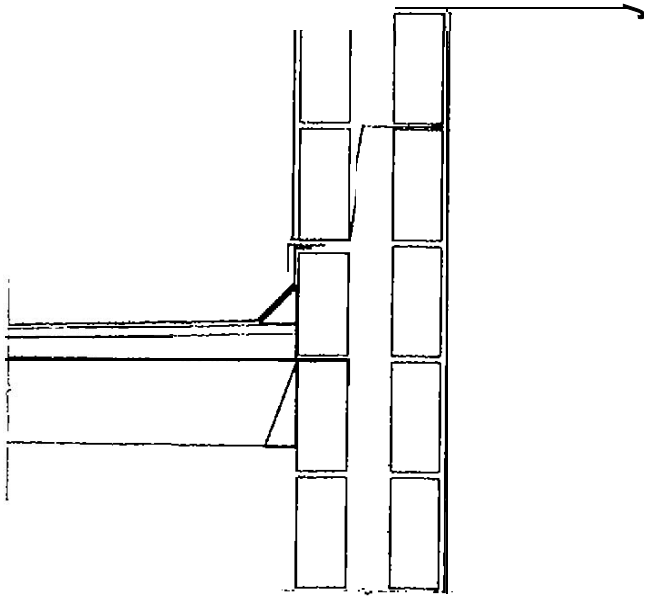
INSULATION OF ROOF ---------- 4

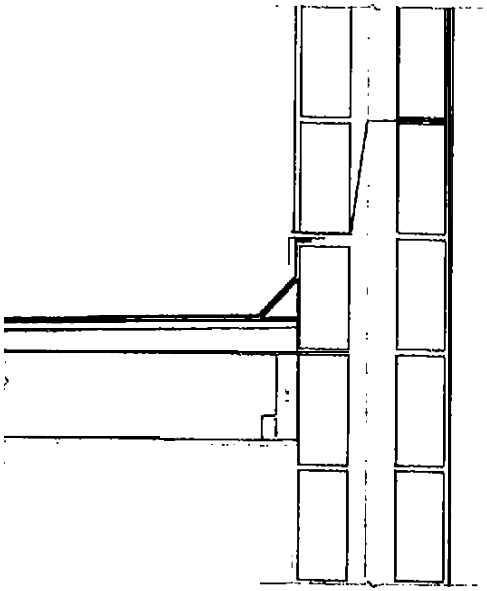
RENDER & PLASTER ---------- 4

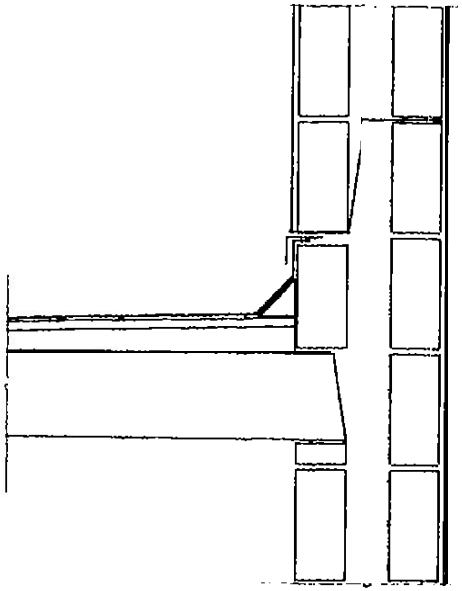
PRESENTATION & DRAUGHTING ---------- 6

	Marks
11 x 4	44
1 x 6	6

QUESTION 3







Q.4.

(i) External Wrought iron gate:

Marks

- Ensure that the surface is dry and free from din. grease or oil. 5
- Use a wire hush to remove any loose rust. 5
- Use emery paper to give a bright metal surfacc. 5
- Apply 2 coats of a suitable metal primer. 5
- The primer should ix worked well into the surface. Ensure that all sharp edges and corners are coated generously. using a good brush. 5
- Apply one coat of undercoat which should be compatible with the finish coat. 5
- Two coats of good quality gloss paint is then applied. 5

O R

Proprietary one coat paint .If this type is being used the procedure is as follows

- Loose rust should be removed using a wire brush. 5
- The surfaces should then be cleaned using emery paper. 5
- Ensure that the surface is clean dry and free from oil, wax or grease. 5
- Paint should lx well stirred before use. Do not add thinner. Paint is applied by brush. 5
- To ensure protection the paint should have a coating four times thicker than ordinary paint. Comers and edges must be adequately covered. 5
- Generally one coat is sufficient, but if a second coat is needed it should be applied as soon as the fist coat is dry (15—30 mins). Do not leave more than 3 hours between coats. 5

MARKS ANY 5 X 5 25

(ii) External smooth plastered wall:

- Allow the wall to dry out properly. 5
- The surface should be cleaned to remove dust. dirt. plaster splashes etc. 5
- Any mould or algal growth should be treated with a fungicidal wash and this is applied by brush to the affected areas. 5
- When treatment is complete wash rhe masonry thoroughly with water to prevent staining of subsequent coats of paint 5
- Cracks and other imperfections should be cleaned out and filled with a flexible filler. This type of filler is easy to sand and adheres well to the surface. 5
- Stabilising primer may be applied to areas where the surface is powdery and chalky. This primer should be well stirred before use and applied by brush to the affected areas. Leave to dry for 16– 24 hours. 5
- Masonry paint is then applied using brush or roller for larger areas. Good ladder or well secured scaffolding is used as appropriate to the job. The finish may also be applied using a good quality spray system. 5

MARKS ANY 5 X 5 25

Q5.

(a)

STORAGE & EXPANSION TANKS. ---------- 5

CYLINDER. ---------- 5

BOILER. ---------- 5

PIPEWORK TO BATH, SINK & W.H. BASIN. ---------- 5

PIPEWORK BETWEEN CYLINDER & BOILER. ---------- 5

FEED FROM EXPANSION TANK TO CYLINDER & BOILER. ---------- 5

FEED FROM STORAGE TANK TO CYLINDER. ---------- 5

MARKS ANY 5 X 5 25

(b)

RADIATORS. ---------- 5

PIPEWORK. ---------- 5

CONNECTION TO BOILER. ---------- 5

CONNECTION TO SYSTEM AT ALTERNATE POSITION. ---------- 5

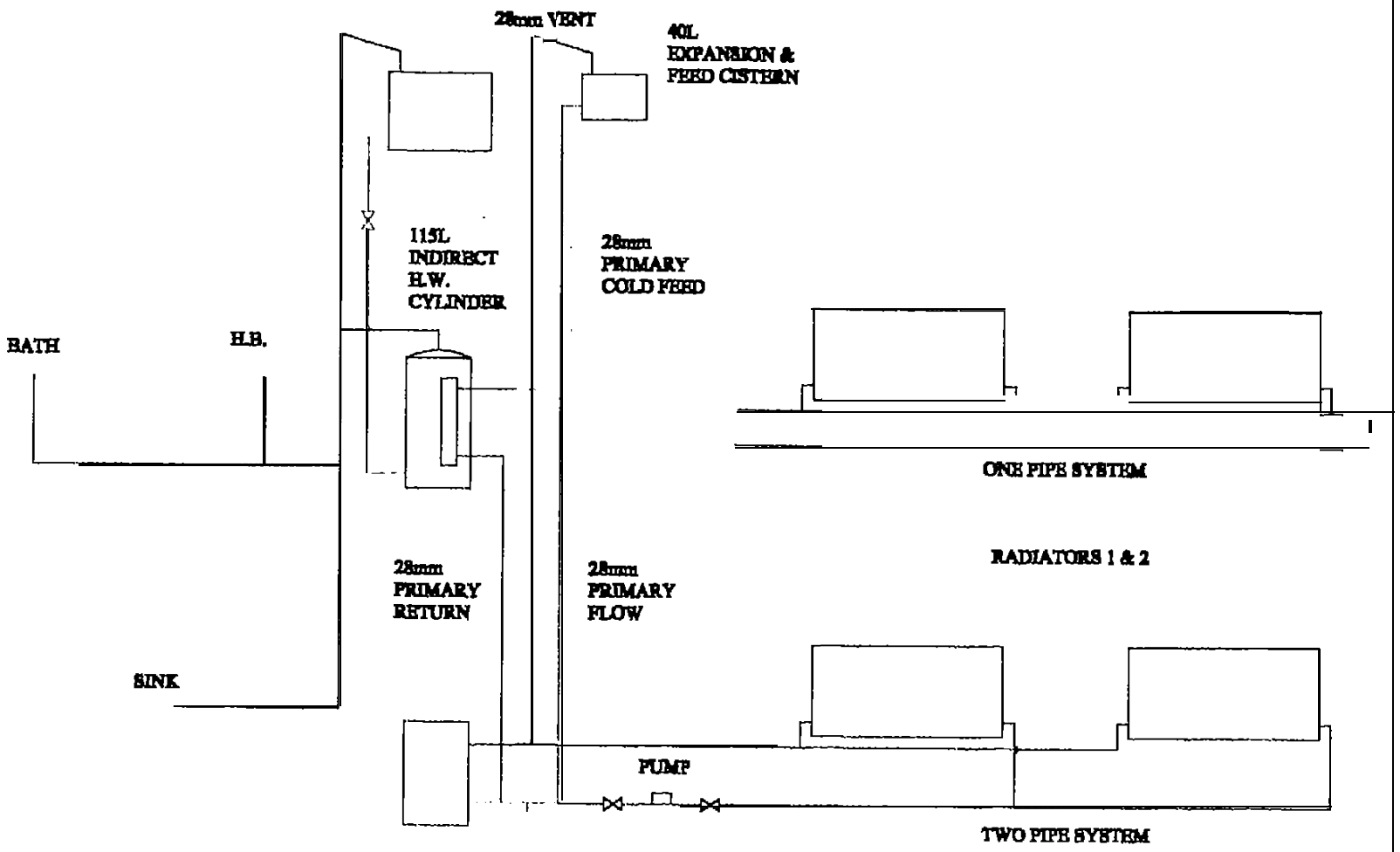
PUMP. ---------- 5

MARKS ANY 3 X 5 15

PRESENTATION & STANDARD OF SKETCH 10

TOTAL 50

QUESTION 5

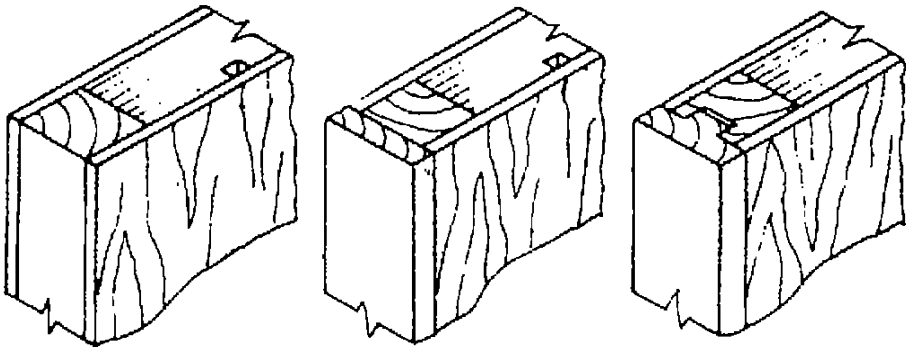

28mm VENT
40L
EXPANSION &
FEED CISTERN
115L
INDIRECT
H.W.
CYLINDER
28mm
PRIMARY
COLD FEED
BATH
H.B.
ONE PIPE SYSTEM
28mm
PRIMARY
RETURN
28mm
PRIMARY
FLOW
RADIATORS 1 & 2
SINK
PUMP
TWO PIPE SYSTEM

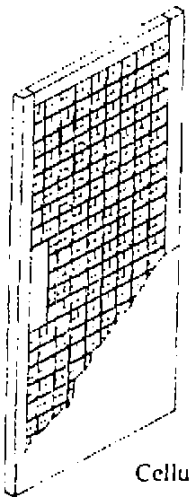
Q 6 (a) part (i)

(i) An internal flush door:

This is the most common type of door used in modern construction.
It is constructed as follows:

- Two plane surfaces which conceal it's internal structure or core.
- Core may be solid.
- Core may be Semi-solid.
- Core can be of hardboard, paper board or cardboard strips.
- Surface finish may be of veneer, plywood or hard board.
- The veneers of hardwood usually have a well defined grain and provide an excellent finished appearance.
- A hardwood edging or lipping strip is provided on the vertical edges as a protection to the facing edges.
- A solid piece is also fitted to accept the door lock.





Cellular Core Door:

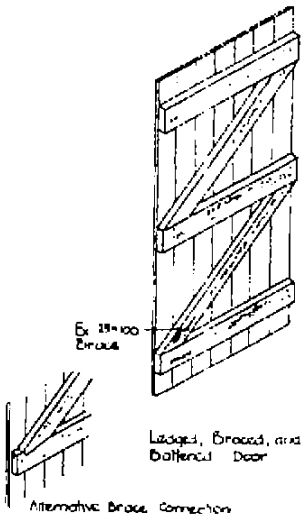
Marks	Good	Note	7
	Good	Sketch	8

Q 6 (a) part (ii)

(ii) An External Wooden Door:

Ledged, Braced & Battened:

- T & G boards fixed to cross pieces or ledges.
- Braces slope upwards from hanging edge, to prevent door from dropping.
- Suitable for outbuildings.
- The long edges are chamfered to give a featutre.

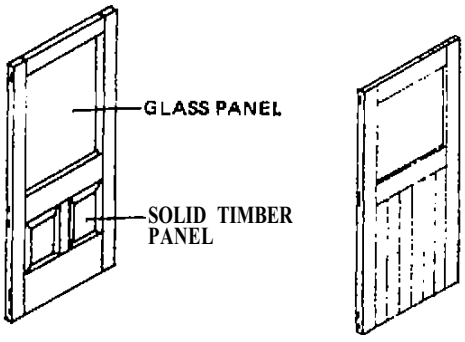


Framed, Ledged, Braced & Sheeted:

- Consist of 2 stiles and top rail of same thickness.
- Joined using M & T joint.
- Bottom and middle rails are also joined to the stiles using M & T joint.
- All edges should be painted or treated with wood preservative before assembly.

Framed & Panelled:

- Consist of 2 stiles, top, middle & bottom rail.
- Intermediate vertical members may sometimes be used.
- These may be muntins or glazing bars.
- Joints are usually M & T.
- Panels may be raised, fielded or flush.



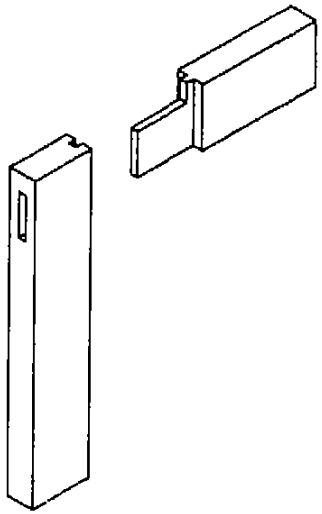
Framed. Panelled and Glazed Door

Marks	Good	Note	7
	Good	Sketch	8

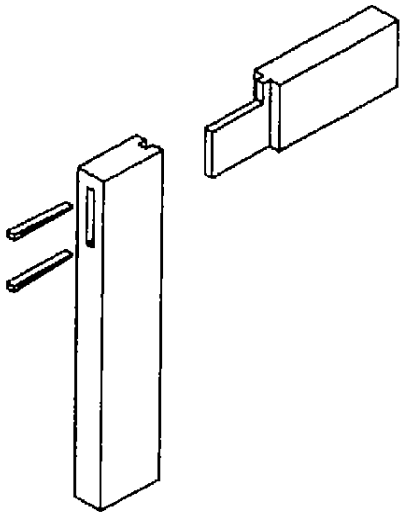
LEAVING CERTIFICATE MENU

QUESTION 6(b)

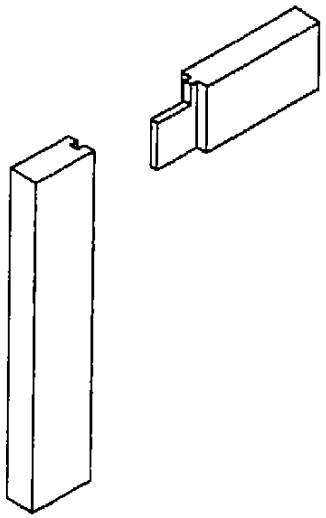
HAUNCHED MORTICE & TENON JOINT



STANDARD



WEDGES



STUB

MARKS

Stile 5
Rail 5
Joint 5
Quality of 5

Q 7. Part (a)

(a)

Ladders:
- Make sure the ladder is right for the job.
- Ladders must be in good condition, secured at the top, and rise at least 1 meter beyond the landing place or that there is a proper hand hold.

Scaffolding:
- Scaffolding must have guard rails and toe boards.
- Brick guards or other suitable vertical protection should be provided where materials may fall from the scaffold.
- Boards and planks should be free of obvious defects and should be arranged to avoid tipping or tripping.
- Working platforms must be fully boarded.
- Trestle scaffolds are to be used only on level ground for light work of short duration.
- Scaffolding should be inspected on a regular basis and especially after bad weather.

Excavations:
- All excavations deeper than 1.25 meters must be shored or sloped back to a safe angle.
- Before digging make sure that the location of underground pipes and services is first established

Stairwell:
- Make sure that the area around stairwells is well protected and that temporary guard rails and balustrades are in place to prevent people falling down.

Helmets:
- Safety helmets must be worn on all building sites.
- Reflective jackets should also be worn.

Electricity: Electrical accidents, many of which are often fatal are often caused by contact with;
- Underground or overhead power lines.
- Unsuitable or badly maintained equipment.
- Bad connections to the supply.

General Points:
- Sites should be kept orderly and tidy.
- Adequate notice of danger areas.
- Visitors to sign at entrance.
- Projecting nails should be either removed or hammered back.

Marks.		
Liit		13
Explain	4 x 4	16

Q 7. **Part (b)**

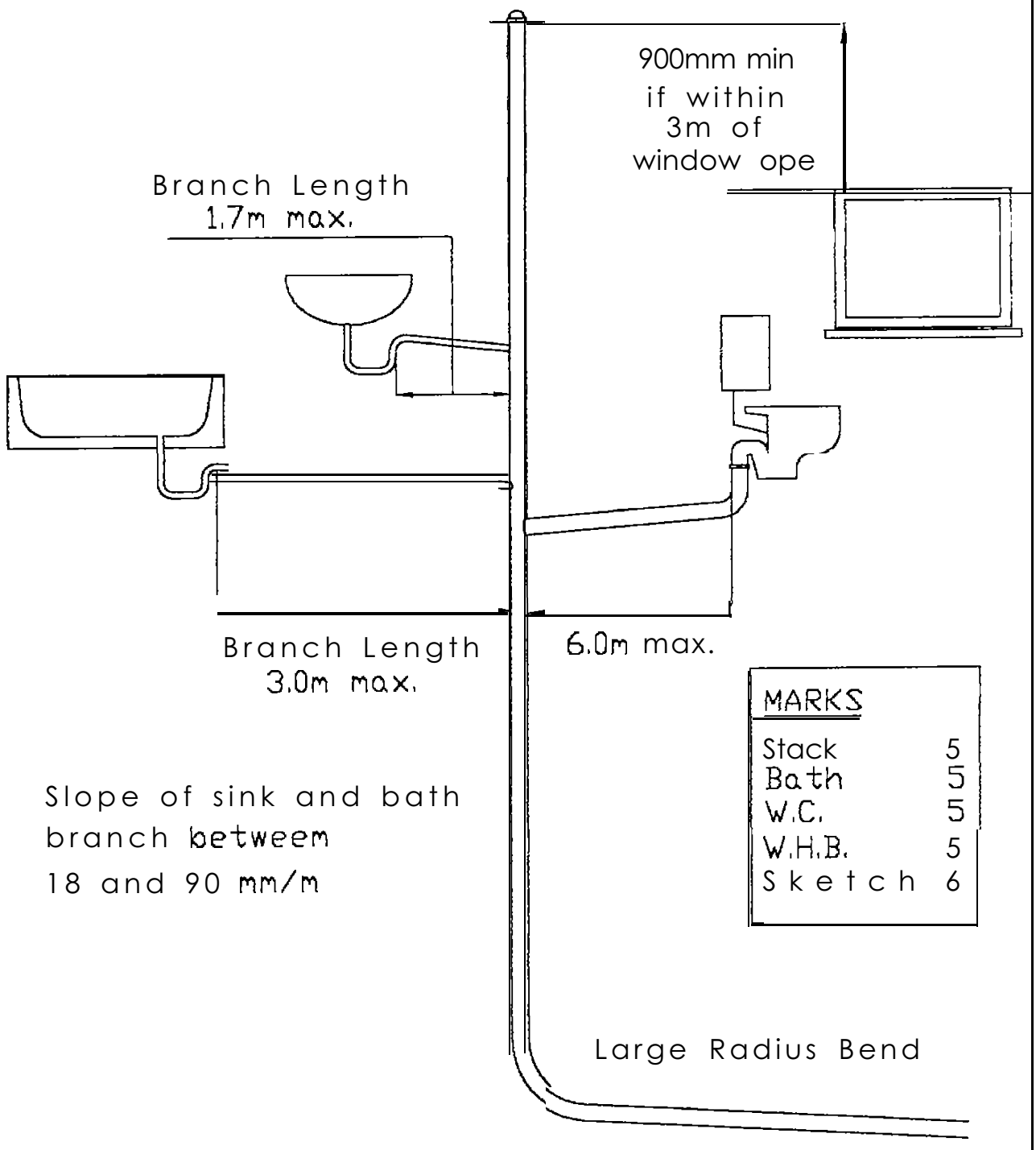
(b)

The following safety precautions should be taken when using an electric drill out of doors.

- Ensure that the plug on the drill and the power socket are sound and free of any defects.
- Ensure that the flex of the drill is sound. Check the lead to ensure it is Gee of any damage. The plug and socket of the lead should also be checked.
- Is the area you wish to work in suitable and safe.
- Check that the mains supply is suited to the particular drill you are using.
- If working from a generator ensure that voltage is suited to the drill being used.
- Is the drill correctly earthed.
- Avoid long trailing leads.
- Make sure the drill is suitable for the job being undertaken.
- If working at a height ensure that ladders and scaffolding are secure.
- Keep trailing cables off the ground and away from water.
- Do not use makeshift plugs and fuses.

Marks.		
List	**3 x 7**	**21**

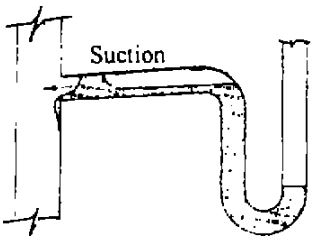
QUESTION 8. (a)



MARKS	
Stack	5
Bath	5
W.C.	5
W.H.B.	5
Sketch	6

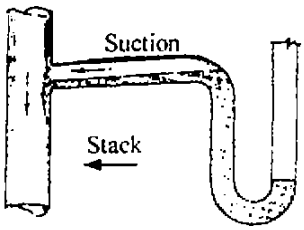
Slope of sink and bath branch betweem 18 and 90 mm/m

Q 8. (b) (i), (ii) & (iii)



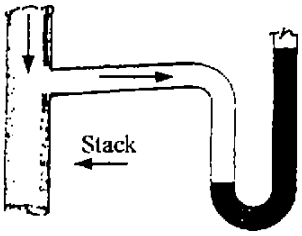
Self Siphonage

(i) Self Siphonage: This means the flow of waste water in an appliance. running full bore in the waste pipe, may cause suction in the pipe which will draw water from the trap.



Induced Siphonage

(ii) Induced Siphonage: The flow of waler passing down in the stack can cause suction in the waste pipe from an appliance and thus draw the water or seal from the trap.



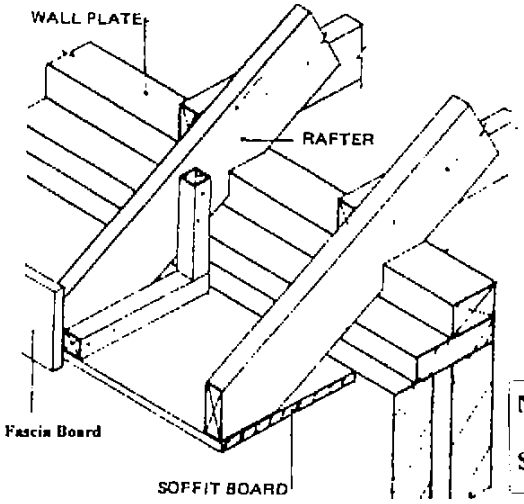
Back Pressure

(iii) Back Pressure: The flow of water down the stack especially in the vicinity of a sharp bend at the foot of the stack may cause an increase in pressure in the waste pipe of an appliance. This may cause the trap seal to blow and thus allow foul air into the room.

	Marking	
Notes	2 X 6	12
Sketches	2 X 6	12

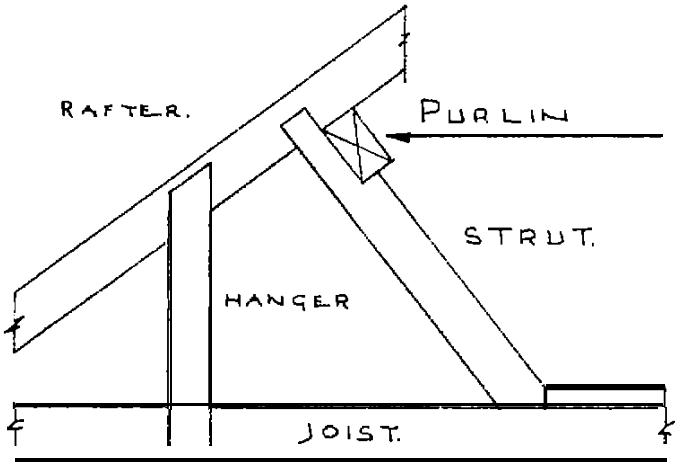
Q 9.

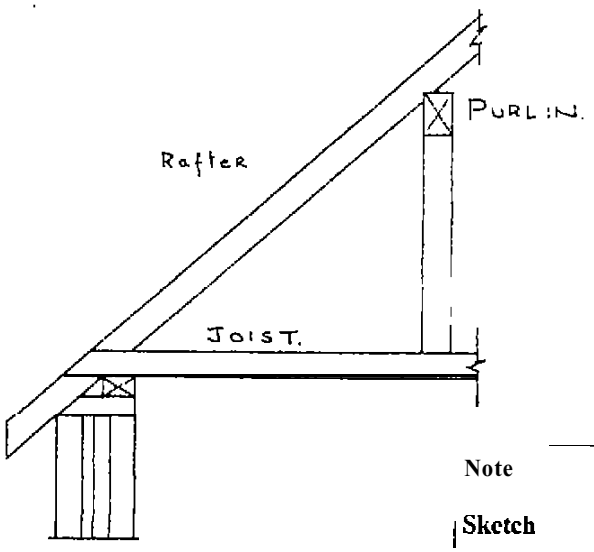
(i) Fascia: This is a vertical board fixed to the lower end of the rafters and supporting the gutter. It can be made of wood or P.V.C.



Note	5
Sketch	5

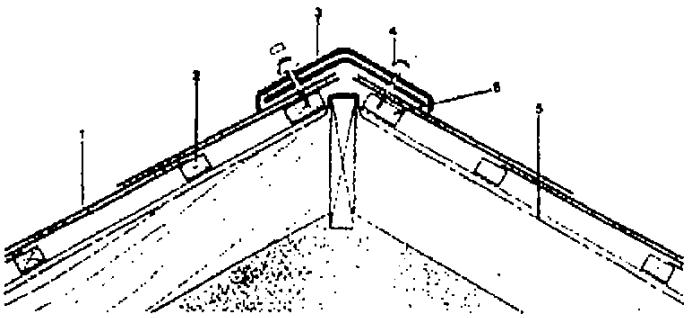
(ii) **Purlin:** This is a horizontal member supporting the rafters. Section size varies but 150 x 15 is common. In a gable roof the Purlin is built into the gable for support. The Purlin is also supported by struts which rest on internal loadbearing walls. Normally positioned mid-way between the ridge and the wall plate.

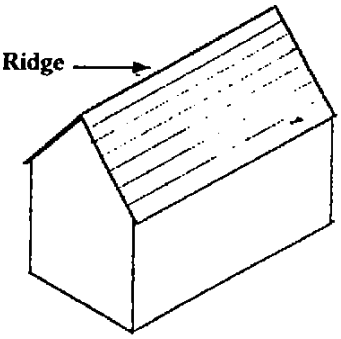




Note	5
Sketch	5

(iii) Ridge: The highest line of the roof; the terminations of the inclined surfaces at the top of the slope.
At the ridge the rafters are splay cut and fixed to the ridge board Rafters should oppose each other in pairs. The ridge is covered with ridge tiles.

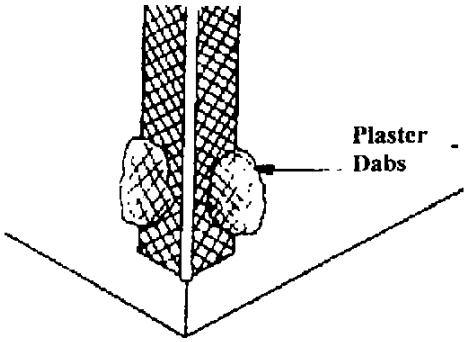




Note	5

Q 9.

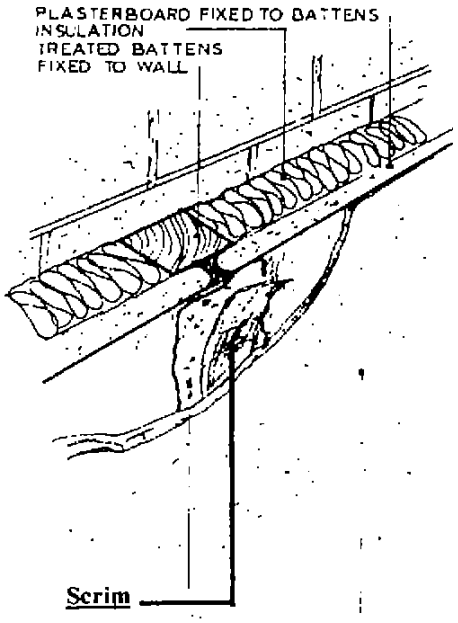
(iv) Angle Bead: This a galvanised or aluminium strip fixed to external corners where plaster is being applied. It provides additional protection to the straight arris. Plaster dabs are fixed at each side of the corner. the wings of the bead are then pressed into the dabs. and the angle is plumbed. The floating coat is applied up to the bead so that it is just below the level of the bead nosing. When this coat is set the finish coat is applied so that it jut covers the bead nosing.



Fixing bead to angle

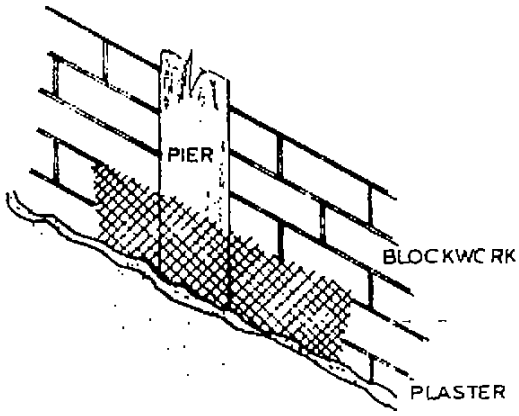
Note	5
Sketch	5

(v) **Scrim:** This is a woven mesh of cotton or hessian used to reinforce joints between plasterboards. or to reinforce joints between plasterboards and walls. It is also used to reinforce plaster castings.



Note	5
Sketch	5

(vi) **Expanded metal:** In plaster work different backgrounds may be encountered on a given surface area, and in such cases additional reinforcement should be used in the form of galvanised expanded metal.
The most common type is made by cutting thin galvanised sheet metal and stretching it into a diamond mesh.



METAL LATH FIXED TO BLOCKWORK ON EITHER SIDE OF THE PIER REDUCES THE RISK OF THE PLASTER SHOWING A CRACK

Note	5
Sketch	5

Any five to be attempted