

MID Term Paper:- "Materials and Methods of Construction"

Submitted By
Mughis Ullah Khan

Submitted to
Mr. Ihsan UlMulk

Registration no 16745

Department BTech Civil

"Iqra National University Peshawar"

2 No 3(A)

P(1/16)

Painting enables you to give the interior and exterior of your home a completely new look within a relatively short time. There are different kinds of paint for indoors and outdoors.

It's also important what kind of surface you're working on - wood, metal, plaster, concrete, masonry or plastic. Each material has its own specific characteristics, so you need to choose the right ~~thing~~ or paint. You can choose from transparent or solid varnish, or glass and satin are very durability, subject or course to damage and normal wear and tear.

Paint and varnish are generic names for outer coatings that dry by evaporation or a solvent. They use different kinds or materials such as solvents, ~~different~~ ~~is kinds or~~ pigments, additives and binding agents. These can be water-soluble (acrylic) or solvent-based (alkyd)

P(2/16)

Q No 1 (A)

Suggest the Type flooring for fabrication Shop
Flooring: \Rightarrow is the general term for a permanent covering of a floor or for the work of installing such a floor covering.

Floor covering: -
is a term that describes any finish material applied over structure to provide a working surface.

Explanation: =

(a) Wall To Wall: =

Wall-to-wall coverings cover an entire floor making rooms appear large and luxurious. Also it can hide any damage or faults in the surface of the floor.

(ii) Area Rugs: -

Area rugs in size, but are not as large as a room size rugs they are used to define areas of a room add interest and even serve as a focal point.

(iii) Shop Size ~~is~~ P (3/16)

Shop-Size rugs expose a small border of the flooring. It can show off a beautiful wood floor while keeping the warmth and comfort of the soft floor covering.

① Kitchen otta Platforms ⇒
There are just too many choices of flooring nowadays.

Laminate ⇒

it is very versatile the core of product is typically made of High Density fibre. the top layer is a photographic layer ~~is~~ which is designed to mimic the look that designers want. i.e. hardwood, designers, knotted, wood.

(ii) Engineered Hardwood ⇒ It's core is usually plywood or high density fibreboard (HDF) and the top layer is composed of a veneer of hardwood which is glued atop the core to mimic nearly any species of hardwood. Engineered hardwood has the natural characteristics of the selected wood.

① Vehicle Parking:

The ultimate range of car parking systems to keep your car park clearly marked and looking its best.

② Basement Car Park Coating Systems

- (i) Gives your basement car park a clean, professional look while providing excellent abrasion resistance and protection to the underlying layer.
- (ii) Solvent free Polyurethane systems reduce the tyre noise associated with traditional car park flooring
- (iii) Damp tolerant Primers provide unparalleled protection against dirt, dust, oil and spillages.

P(5/16)

Q No 2(A)

Normally in R.C.C work M20 grade concrete is required and for quantity the proportion is only change ~~by~~ but step remain same

① The example of M20 grade \Rightarrow

If u are making the M20 grade concrete which proportion is.

1:1.5:3 in which

- (i) 1 part of cement
- (ii) 1.5 part of sand
- (iii) 3 part of aggregate.

Now making concrete the 52% volume is. Increase because when water is added then volume is decrease.

So making ~~Concrete~~ 1 meter cubic we have to take volume 1.52 meter cube because of shrinkage of concrete
Now total volume of material is

$$1 + 1.5 + 3 = 5.5$$

Now total quantity of cement required.

P(6/16)

In 1 cubic meter.

(i) for Cement:⇒

$1/5.5 \times 1.52 = 0.2763$ meter cube for
bag divided with one bag Cement
bag volume $0.035 = 8$ bags

(ii) For Sand:⇒

$$1.5 \times 0.2763 \text{ or } (1.5/5.5) \times 1.52$$

$$= 0.4145 \text{ meter cube}$$

(iii) For aggregate:⇒

$$3 \times 0.2763 \text{ or } (3/5.5) \times 1.52$$

$$= 0.829 \text{ meter cube}$$

it is calculation of concrete.

If you want to calculate cement quantity then take the proportion unit which is 1, multiply with total quantity of cement which is 1.52,

And now divide with total volume which is 5.5 and you get your answer

And second thing you can see my highlighted calculation which is simple than first one.

PL7/16

For finding quantity you did this step

For cement $1 \times (1.52/5.5)$

For sand $1.5 \times (1.52/5.5)$

For aggregate $\Rightarrow 3 \times (1.52/5.5)$

P(8/16)

Q No 2 (b)

(4) Jewellery store: \Rightarrow This creates the need to acquire the best glass-case displays that are both secure and will give great views of the diamonds, pearls, and gems to buyers. There are four types of safety glasses that provide the ultimate security for glass-cases.

(i) Toughened Glass: \Rightarrow Toughened glass is glass that has been treated using heat and chemicals to make it stronger. When exposed to excessive force, it breaks into granular chunks that are held together instead of shattering into a million pieces. It not only protects your precious jewelry from burglars but also helps avoid injury should the glass break accidentally.

(ii) Laminated Glass: \Rightarrow This type of glass consists of several layers of glass and plastic. An interlayer holds the two in place. When exposed to stress, this interlayer holds the glass together and keeps it from falling apart. It is characterized by a web-like pattern when cracked.

P(9/16)

Q No 2 (b)

(3) Key Lights of roofs:⇒

Introduction:⇒

One effective way to bring into the home is through the use of skylights which are windows installed in roofs or ceilings.

Well designed daylighting features can deliver many benefits to the home such as high light levels, potential for energy savings, a view and connection to the outdoors and light wavelengths that help maintain human circadian rhythms and immune system health. Skylights provide opportunities for ventilation. It should be properly installed to avoid water leakage.

Shapes:⇒

Rectangles

Circles

Ovals

Diamonds

Skylight size:⇒ The size of skylight is directly related to daylight levels and solar heat gain. The skylight should not be more than 5% of the floor area in rooms with

P(10/16)

many windows and not more than 15% in rooms with windows.

ORIENTATION ⇒

Skylights on north facing roofs provide relatively constant illumination with a cool light appearance while skylights on south facing roofs provide constant high illumination levels and the greatest potential of heat gain.

ENERGY ⇒

Choose a skylight with an energy performance rating that is appropriate for your climate and home design.

Fixed Skylights ⇒

Fixed skylights provides an economical alternative in creating a spacious home that is filled with natural light.

P/11/16)

Q No 2 (b)

(ii) Laboratory apparatus:⇒

① Introduction:⇒

Before conducting an activity or experiment, you must know what equipment you should need to use and how to use it. This is to avoid accidents and mistakes in the lab and to increase everyone's safety.

(ii) Adapter:⇒ a device that converts attributes of one device or system to those of an otherwise incompatible device or system.

(iii) Bunsen clamps:⇒ Used to hold things in its grip, especially useful for holding a erlenmeyer flask.

(iv) Beakers:⇒

a simple container for stirring, mixing and heating liquids. Commonly used in many laboratories.

P(12/16)

(v) Bunsen Burner: ⇒
device for combining a flammable
gas with controlled amounts of
air before ignition. it produces a hotter
flame than would be possible using
the ambient air and gas alone.

(vi) Acid and Base Burette: ⇒
used to
determine the concentration of either
the acid or base from the known
concentration of the other solution.

(vii) Weighing Scale: ⇒
used to measure the
weight of an item.

P(13/16)

Q No 2 (b) (i) Suggest the types of glass to be used the making of partition wall:- A glass partition wall is an interior wall structure made primarily of glass or a glass alternative. Glass panels are paired with metal framing, channel and ~~paired~~ or clamps to create custom non load-bearing walls that can function as office dividers, bathroom partition wall, glass wall systems, and more. The glass partition wall has become especially popular in modern-office design and is used in office cubicles, conference room, and entryways. However, these glass walls are also making their way into home design solutions in small apartments and modern living spaces. Residential applications include living room walls, master bathroom walls, and accent walls.

Q No 1 (B) \Rightarrow

P(14/16)

Ans:- Introduction:- For this Project, I had to measure the height and length of a brick wall. Then I had to count the actual number of bricks in the wall. I also had to use the brick layer's formula to calculate the number of bricks. Lastly, I had to analyze the two number of bricks to see if they are about the same.

Length:- The measurement that I got for the length of the brick wall was 6 feet, 3 inches which is 6.25 feet.

Height and Area:- The measurement I got for the height of the brick wall was 5 feet 2 inches, which is 5.17 feet. I calculated the area of the wall by multiplying the length times the height. My answer is 4,650 square inches.

P(15/16)

Counting: \Rightarrow

I counted a total of 180 bricks in the wall behind the school.

Formula: \Rightarrow

The Brick layers formula is

$N = 7LH$. N equals the number of bricks and L equals the length of ~~bricks~~ of the wall, and H equals the height of the wall.

Calculations: \Rightarrow The actual number of bricks was 180, so I had to adjust the Brick layer's formula so it would work for my wall first, I tried 6.

This did not work for my wall, so next I tried 5.

$$N = 6LH$$

$$N = 6 \cdot 6 \cdot 25 \cdot 5.17$$

$$N = 194$$

180 is somewhere between 161 and 194. So I tried 5.5, which gave me 178 bricks.

(Close, but not it, so I

tried 5.6 and that gave me 180 bricks.

$$N = 5LH$$

$$N = 5 \cdot 6 \cdot 25 \cdot 5.17$$

$$N = 161$$

P(16/16)

Calculations: =>

I calculated a total of
226 bricks using the brick layer's
Formula

$$N = 7LH$$

$$N = 7 \times 6.25 \times 5.17$$

$$N = 226.$$