

NAME	<0>	TAHIR KHAN.
I.D	<0>	16743.
Section	<0>	"B"
Subject	<0>	Concrete technology
Date	<0>	14/4/2020.

(1)

Question No # (1):

Which step is taken to prevent flash setting of cement? Also write to prevent steps of false setting of concrete.

Answer:-

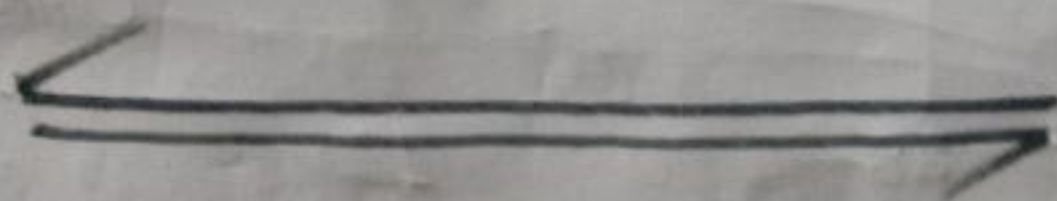
When cement is mixed with water, it becomes hard over a period of time. This is called setting of cement.

Gypsum is often added to portland cement to prevent early hardening or "flash setting" allowing a longer working time. Gypsum slows down the setting of cement so that

cement is adequately
hardened

Flash setting:-

Flash setting is an early loss of work ability in paste, mortar, usually accompanied by the evolution of considerable heat resulting primarily from the rapid aluminate of the proper amount or form of calcium sulfate is not available to control the calcium hydration, rapid stiffening takes place.

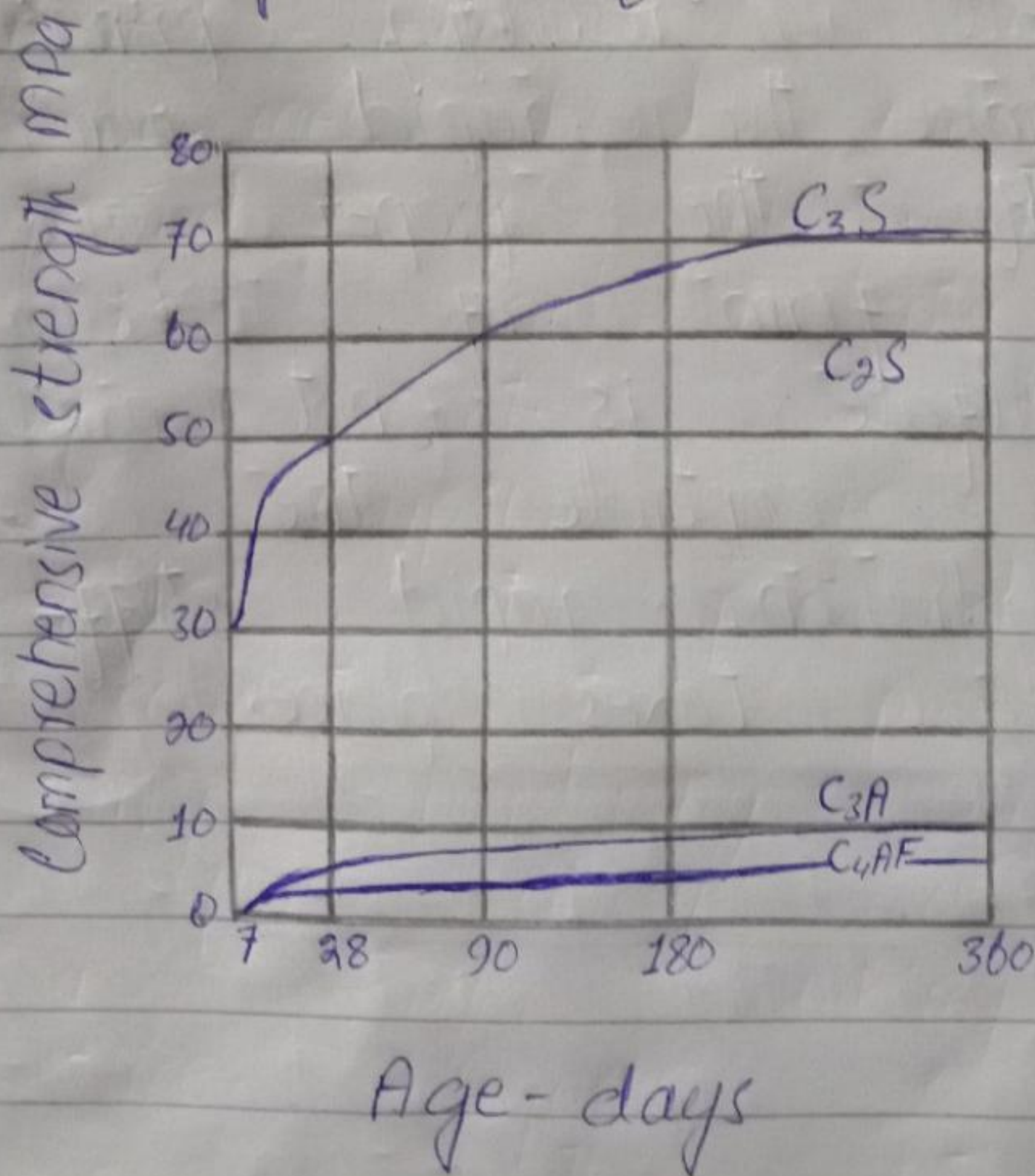


Question No # (2):

Draw The graph showing
The strength of pure
compounds of cement?

Answer:-

Development of
strength of pure compound



Hydration:-

- ① Cement acquires binding properties when mixed with water.
- ② The chemical reaction that takes place between water and cement is referred to as hydration of cement.
- ③ The reaction of cement with water is exothermic. This liberation of heat is called heat of hydration.
- ④ Although simple hydrates such as $C-H$ are formed, the process of hydration is a complex one and results in reorganization of the concrete.

Question No # (4):

what is the effect of
compaction on interrup-
ted air of concrete.

what will be the
effect on strength if
concrete is not compac-
ted sufficiently explain
with graph?

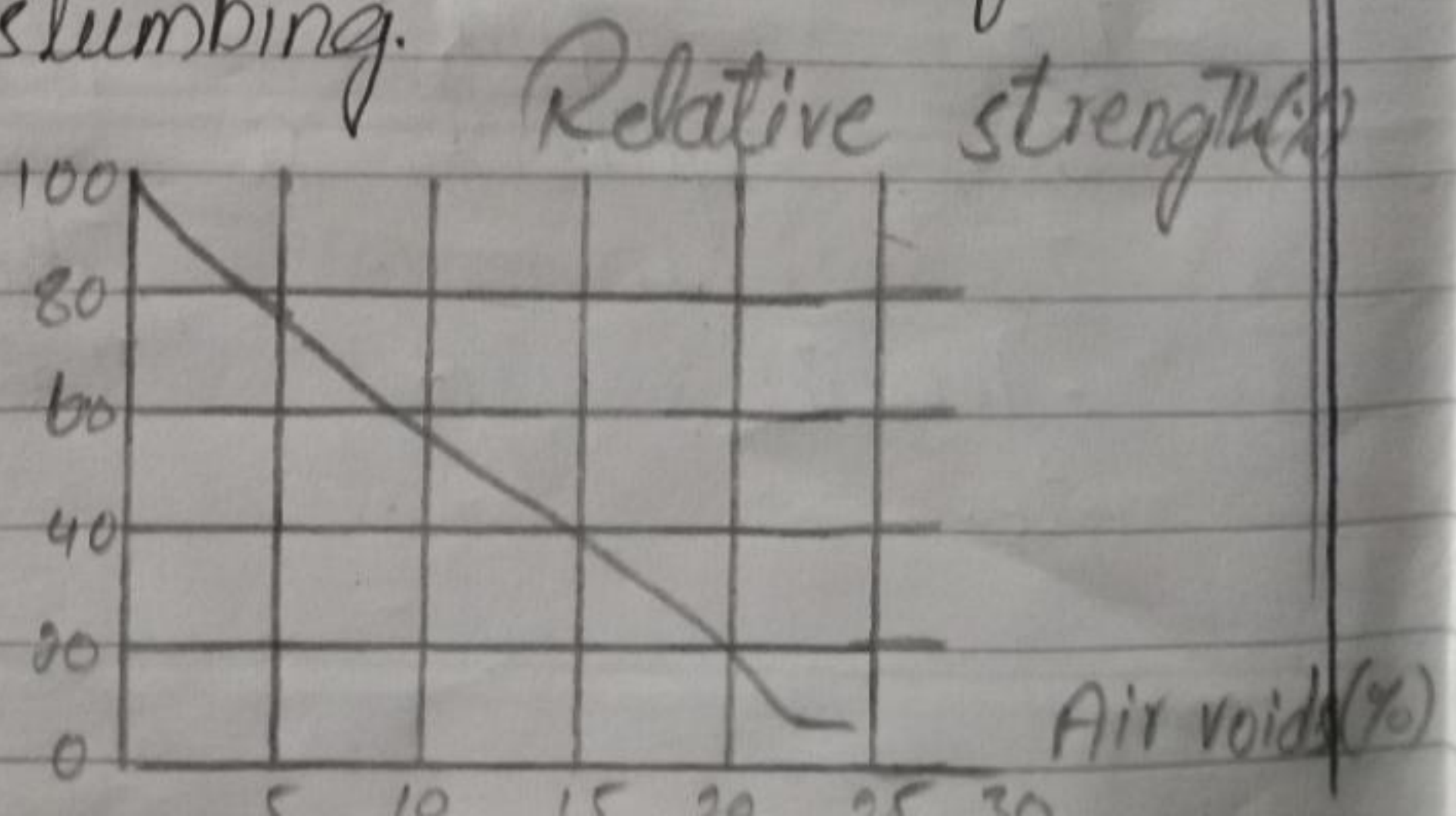
Answer:-

Compaction:-

Compaction is
the process which
expels interrupted air
from freshly placed
concrete and packs
the aggregate particles,
to gether so as
to increase the
density of the conc-
rete.

Introduction:-

Proper compaction also insures that the frame work completely filled i.e. There are no pockets of honeycombed materials, and that the required finished is obtained on vertical surface. The aggregate particles although coated with mortar tend to arch against one another and are prevented from slumping.



Question No # (5):

What is the percentage of gypsum added to cement limited only five (5) percent.

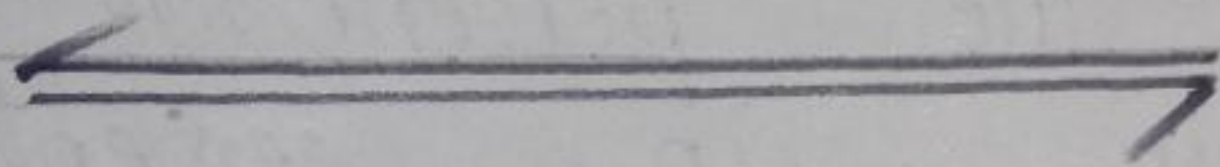
Answer:-

The percentage of gypsum in cement varies from 3-4%. It is added at the end of manufacturing of cement. Simply it is of retarder it is not the cement or concrete set immediately after the addition of water.

Gypsum:-

Gypsum 2-3% is added to cement in powder form to slow down the setting of cement percent of

cement or gypsum to
be added is depend
on the properties of
cement required. it
is added up to
5%.



Question No # (6)
What is the effect of the
bond strength of concrete?

Answer:-

Bond Strength of
Concrete:-

The force that
resist to separation
of mortar and concrete
from reinforcing steel.
or (other material is

in contact such as
adhesion freshing due
to shrinkage and
longitudinal shear
in a concrete and
ingade by body
formation.

Shape of agregate:-

The different
shap of agregate
are given below:

Rounded, agregate, natural
agregate smoothed by
weathring aersion
and attrition rocks
stone, sand and
gravels found in
river beds, are The
most common rounded
agregate. Rounded agg-
regate are the main
factor of aggregate.

Size of aggregate:-

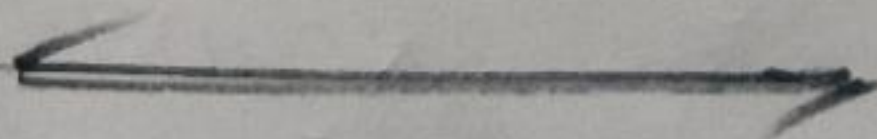
When the aggregate is sieved to 4.75 mm sieved the aggregate retained is called coarse aggregate.

Texture of aggregate:-

The surface texture of aggregate can be in the form of either smooth or rough.

Bleeding:-

- ① Reduce water (H_2O) content. Use lower slump
- ② Use final cement.
- ③ Increase amount of cement



Question No # (7)

What is effect of the following workability of aggregate?

Answer:-

Porosity of and absorption:-

Absorption the property of a material to absorb the water. Permeability

is the property of a material to pass the water of fluid.

Porosity is the property of a material which contain the voids.

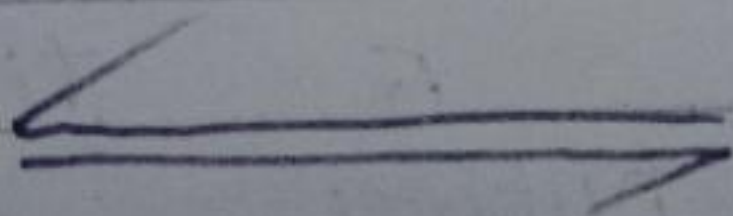
Air entraining agent:-

Air entrainment is the intentional creation of tiny air bubbles and concrete makers.

introduces the bubbles
by adding to mix
an air entrainment
agent a surfactant
the air bubbles are
created during mixing
plastic concrete.

Coarse aggregate to fine
aggregate ratio:-

There is an
optimum coarse to fine
aggregate ratio for
RCCP. Increasing cement
from 9 to 12% has
significant effect on
the the properties of
RCCP. Coarse to fine
aggregate ratio.



Question No # (8):

What is effect of fineness of cement on the following?

(1):- Strength of Concrete:-
Concrete

comprehensive strength requirements can vary from 2500 psi (17 mpa) for residential concrete to 4000 psi (28 mpa) and higher in commercial structure. Higher strength upto and exceeding 10,000 psi (70 mpa) are specified for certain application.

(2) Workability of concrete:-
workability of concrete is a property that

directly impacts strength,
quality, appearance, and
even the cost of
labor for placement
and finishing

