- **Design Requirements**

Sr. No	Requirements	Area
1	Reception + Waiting	40 SQ.M
2	Consultant Room (with exam and Att.Toilet)	15 SQ.M Each
3	Assistant Doctor: consulting (With Exam room)	15 SQ.M Each
4	Minor procedure (With store)	15 SQ.M Each
5	Radio Lab (With Att.Toilet and changing room)	25 SQ.M Each
6	Conference Room for consultants (With Att.Toilet)	20 SQ.M
7	Staff Room (With Att.Toilet)	25 SQ.M
8	Pantry	15 SQ.M
9	Toilets (Ladies & Gents)	15 SQ.M Each
10	I. P. D. (for 5 Patients with Nurses Station Toilets are included in the Area)	40 SQ.M
11	Emergency Room (for 5 Patients)	25 SQ.M
12	Minor OT + scrub + store + recovery	40 SQ.M
13	Doctors parking 2 no. four wheelers	Adequate
14	Ambulance parking 1 no.	Adequate
15	Visitors parking 5 no. four wheelers, 10 no. two wheelers	Adequate
16	Patient lifts, ramps	As required

Mandatory Drawing requirements:

1) Concept / thought process

2) Site plan   1:100

3) Floor plan(s)   1:50

4) Elevation (1 no.)   1:50

5) Section (1 no.)   1:50

6) 3D sketch   Proportionate

Note: 1. Suitable rendering and neat drawings will carry 10 % marks

2. Tracings required for rough work on design should be submitted along with answer sheets.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103
End Semester Examination – OCT/NOV - 2018

Branch: B. Arch
Subject: Theory of structures II
Marks: 60   Date: 25/10/2018

Sem.:- II
Subject Code: - II (AR2003006)
Time: 3 Hrs.

Instructions: - *1. Q. No. 1 is compulsory.*
2. Solve Q. No. 2 or Q. No. 3

Q.1 (a) Define volumetric strain, shear stress and write down relation between various moduli. (5)

(b) What are assumptions of theory of simple bending. (5)

Q.2 (a) Define: Deflection (2)

(b) Derive the formula of slope and deflection for simply supported beam carrying uniformly distributed load. (12)

(c) Prove Maximum combined stress = P/A (1+ 6e/b) and Minimum combined stress = P/A (1- 6e/b). (10)

(d) What is Kernel of section? (2)

(e) What is procedure of section method to determine the forces in member of frames (12)

(f) The truss ABC shown in fig.1 has a span of 5 meters. It is carrying a load of 10 kN at its apex. Find the forces in the members AB, AC and BC by graphical method (12)
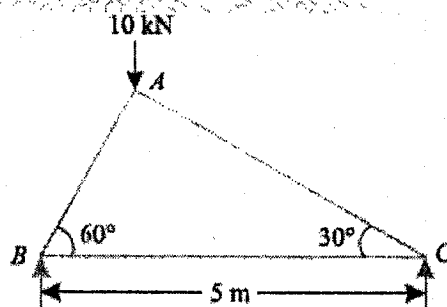

Fig.1

Q.3 (a) Formula for slope and deflection (2)

    i) Simply supported beam carrying point load

    ii) Cantilever beam carrying UDL

(b) Derive the formula of slope and deflection for simply supported beam carrying uniformly distributed load (12)

(c) Define combined stresses (2)

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD -402 103
Mid Semester Examination – OCTOBER - 2018

Branch: B.Arch. First Year   Sem.:- I

Subject:- HISTORY OF ARCHITECTURE 1

Subject Code: - AR10100005   Marks: 20

Date: 12 - 10 -2018

Time: - 1 Hour.

==

Instructions: - 1. The First question is compulsory

2. Answer any ONE out of the remaining.

Q. No.1:- SKETCH any 4 types of prehistoric dwellings and write the name and geographical location of the same. Also mention the building material used.   **8 Marks**

Q. No. 2:- Describe sequentially how pre historic man evolved and established civilizations with respect to the following points: **12 Marks**

1. Anatomical evolution (physical and brain)

2. Inventions and discoveries

3. Living in groups to forming cities

4. River valley civilizations

Q. No.3:- write about the Mesopotamian Civilization and its various ruling periods by giving one architectural example of each.   **12 Marks**

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD -402 103
Mid Semester Examination – OCTOBER - 2018

Branch: B.Arch (F.Y)   Sem.:-I
Subject:- ENVIRONMENTAL SCIENCE I
Subject Code: - AR10100004   Marks: 20
Date: -   11/10/2018
Time: - 1 Hour.

Instructions: - 1. The First question is compulsory

2. Answer any ONE out of the remaining two Questions.

3. Draw Sketches where ever necessary.

Q. No.1:- Short Answers. Attempt any 4   (4 x 2M) 8 Marks

1. Define THERMAL COMFORT.
2. Enlist all INDIAN CLIMATE classification.
3. Draw proper sketches of air flow around the building.
4. Enlist different layers of ATMOSPHERE.
5. Advantages of Stack Ventilation.
6. Short note on CONVECTION.

Q. No. 2:- Answer the following any THREE   (3 x 4M) 12 Marks.

1. Explain the following elements of climate with proper sketches.
   a. Temperature.
   b. Wind.
   c. Humidity.
2. Explain Characteristics of COLD and CLOUDY climate type.
3. Explain any two factors affecting air flow through the building.
4. Write a note on BIO CLIMATIC chart and BIO CLIMATIC requirements.

OR

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD – 402 103
Mid Semester Examination – October – 2018

Branch: B. Arch (First Year Architecture)   Semester: I

Subject: Building construction Technology & Materials-I   Marks: 50

Subject Code: AR10100003

Date: 10/ 01 / 2018   Time: 2 Hrs.

Instructions: 1. All Questions are compulsory.
                 2. Do not erase construction lines.
                 3. Solve all questions on answer sheet.

Q. No. 1	Solve any TWO of the following: (10 Marks)
A)	Explain the different components of building with proper sketches.
B)	State the uses of lime in construction.
C)	What is meant by bulking of sand? Explain it.
	OR
Q. No. 1	Explain in detail manufacturing process of bricks with (10 Marks)
	proper sketches
Q. No. 2	Attempt any ONE of the following: (20 Marks)
A)	Draw isometric view of Standard brick, King Closer, and Mitred closer.
B)	Draw plan and isometric view of one & half bk.thk. wall in English bond,
	.(1:100)
Q. No. 3	Attempt any ONE of the following: (20 Marks)
A)	Draw a detail section of external wall of a load bearing building, showing all its components
	With proper nomenclature and dimensions. (1:10)
B)	Draw plan and three successive courses of one brick thick wall in double Flemish bond.(1:100)

----- END OF PAPER -----

Branch: B.Arch. (_First Year Arch)

Sem.:- I Sem

Subject: - Architectural Drawing and Graphics – I (Manual)

Subject Code: - AR10100002

Marks: 50

Date: 09/10/2018

Time: - 03 Hour.

Instructions:- 1. All Questions are compulsory.

2. Do not erase construction lines.

3. Solve all questions on drawing sheets.

Q. No. 1:- Solve any two of the following. (5 x 2 = 10 Marks)

  a. Draw/ construct a Regular Pentagon with 4cm as side/ edge length.
  b. Inscribe a Regular Septagon in a circle having 7cm as Diameter of circle.
  c. Divide a Quarter Arc with 7cm as Radius into equal Five parts.

Q. No. 2:- Draw Orthographic Projections of line XY, 10cm long, is inclined at 45° to Horizontal Plane (H.P) and Vertical Plane (V.P.) Line is touching to both the planes i.e V.P & H.P
(20 Marks)

OR

Q. No. 2:- Triangular Plane with 5cm as edge length is perpendicular to H.P and inclined at 45° to V.P. Plane is 2cm away from V.P and 3cm away from H.P. One of the edge of the plane is Parallel and closer to V.P. Draw Orthographic Projections of it. (20 Marks)

Q. No. 3:- A Hexagonal Plane of 3.5 cm sides is perpendicular to V.P. and inclined at 45° to H.P. Plane is resting on one of its edge on H.P and 2 cm away from V.P. Draw Orthographic Projections of it.
(20 Marks)

OR

Q. No. 3:- A Octagonal Prism with 2.5cm as base edges and 8cm as axis height/ length, is resting on one of its rectangular faces on H.P and 2cm away from V.P. The axis of Prism is making 45° inclination with V.P and parallel to H.P. Draw Orthographic Projections of it.

(20 Marks)

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD -402 103
Mid Semester Examination – OCTOBER - 2018

Branch: B. Arch (First Year) 2018-19   Sem.:- Mid Semester Exam

Subject:- Architectural Design - I

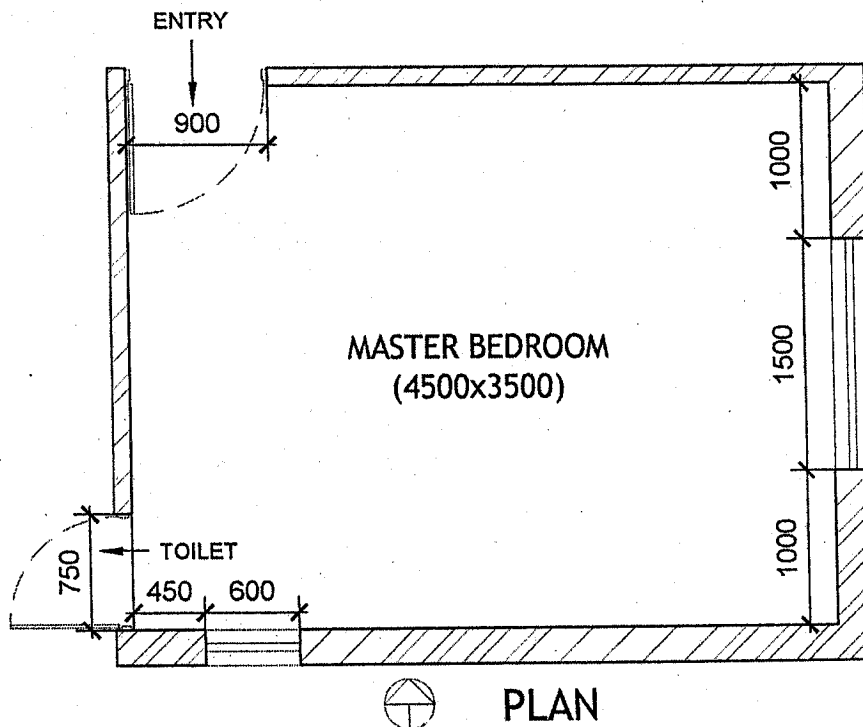Subject Code: - AR10100001   Marks: 50

Date: - 08-10-2018

Time: - 6 Hours.

==

Instructions: - 1. Solve any one of the two.
            2. Assume suitable data if required.

Q. No.1:-   50 Marks

A master bedroom of size 4.50mX3.50m has to be designed considering furniture arrangement and circulation with respect to anthropometry. The entry to the bedroom is from North side with two windows (Cill at 0.90m and Lintel at 2.10m) and attached toilet. The final proposal should consist of layout plan in a proper presentable format with any two internal elevations at suitable scale.

ENTRY

900

MASTER BEDROOM
(4500x3500)

1000

1500

1000

TOILET

750

450   600

PLAN

Branch: **B.Arch**   Sem.: **III**

Subject: **Architectural Design- III (AR20030001)**   Marks: **60 Marks**

Date: **26-10-2018**   Time: **6 Hrs.**

Trekkers Hub, near Kalsubhai at Bari, Maharashtra.   (60 Marks)

Brief :

The Sahyadri range is the northern part of the Western Ghats, a major mountain range of India, well known for its flora, fauna and geological formations.

The thrilling range of **Kalsubai** attracts trekkers & wanderers. The tallest peak of Kalsubai (1646m or 5400 ft), of the Sayadris, earns the much glorified title of the 'Everest of Maharashtra'.

It commands a picturesque landscape and the mountain can be viewed, in its entirety from Bari village. The peak attracts a large number of avid trekkers throughout the year determined to scale the mountain. The foothills of Kalsubai range is covered by dense forest, and being a region in ghats, they bare heavy rains.

To Design:

A trekker's hub that will provide basic facilities .The program should accommodate spaces those will interact, relax, facilitate stay, discuss, plan about their trekking activities with Innovative & creative approach considering macro and micro climate.

	Requirements	Nos	Area in sq.m
1	Security cabin		
2	Entrance lobby with Reception desk, display of photographs, models of Sayadri ranges + visitors waiting		50
3	Admin area – officefor staff (provision of desk & storage)	4nos	20
4	A.V room	1 no	50
5	Equipment store	1 no	15
6	Roomswith attached toilet	2nos	15
7	Dormitories	4nos	80
8	Adequate Toilets facilities (separate M+F)		
9	Store	1 no	20
10	Camping area - tents	8 nos	
11	Kitchen + Dining area		100
12	Campfire area		
13	Parking : Cars	4 nos	
	Buses	2 nos	
	2 Wheelers	10 nos	

Drawing requirements

1. Sketches showing concept/thought process
2. Site plan   1:100
3. Floor Plan(s)   1:50
4. Sections (2 nos)   1:50
5. Elevations (2 nos)   1:50

Students can present 3D sketch view or any specific details if necessary (these sketches are not compulsory)

Branch: B.Arch.   Sem:- III

Subject: - (AR20030003) Building Construction Technology and Materials-III

Marks: 60   Date: 22/10/2018   Time: - 3 Hrs.

Instructions: - *1. Question No. 1 is compulsory.*
2. Answer any FOUR out of the remaining.

Q. 1 Explain the following with neat sketches (**any FOUR**)   20 Marks

     1. Seasoning of Timber

     2. Laying of Interlocking roofing tiles

     3. Water proofing system for Basement.

     4. Method of painting on old plastered wall.

     5. Mortise & Tenon joint and Dove-tail joint.

Q. 2 Define the following (**any Two**)   10 Marks

     1. Sealants

     2. Cement based Paint

     3. Veneers & Plywood's

Q. 3 Draw neat sketches (**any Two**)   10 Marks

     1. Joint between King post and Tie beam.

     2. Joint between middle rail styles of a door.

     3. Fixing of glass to window frame.

Q. 4 Draw sketch and explain in details (**any One**)   10 Marks

     1. Draw double joist timber flooring for a dance hall admeasuring **3.5 mt X 7.0 mt**. Draw plan and two sections with important joinery details.

     2. Draw timber dog legged staircase for a building with the height 3.3 mt. and the width of one flight is 1.0 mt.

Q. 5 Describe the manufacturing process of Plywood and veneer.   10 Marks

Q. 6 Explain different types of flooring tiles with their properties and laying method   10 Marks

Q. 7 Explain different types of external and internal plasters with its method of application, advantages and properties.   10 Marks

*** End ***

Branch: B. Arch   Sem.:- III
Subject: Building Services-I
Marks: 60   Date: -23/10/2018   Subject Code: AR20030004
                                                                  Time: - 3 Hrs.

Instructions: - *1. Q.No. 1 is compulsory.*
              2. Answer any FOUR out of the remaining.

Q. 1   Define (any four).   20 Marks

(a)   Water treatment Plant.

(b)   Water supply in low rise building.

(c)   How impurities water can be treated.

(d)   Types of Valves used for water supply.

(e)   Types of overhead tank with appropriate sketches.

(f)   List down the Sanitary Fixtures with sketches and its Uses.

Q. 2   Explain with neat Sketches (any Two out of Three)   10 Marks

(a)   Sources of Waters.

(b)   Water Distribution networks.

(c)   Inspection chamber.

Q. 3 Write Short notes on any Two of the following   10 Marks

(a)   Conventional and Non conventional Energy sources for Hot water.

(b)   Insulation of Piping for Hot water supply.

(c)   Septic Tank.

Q. 4   Draw sketch and explain in details. (any One out of Two)   10 Marks

(a)   Explain various Sanitary fixtures and its Connections and its Functions.

(b)   Circulation system types for Hot- cold water supply.

Q. 5   Explain in Detail the water Distribution system in a city Level.   10 Marks

Q. 6   Types of traps Used for Domestic Sewage System.   10 Marks

Q. 7   Draw Sewage Disposal Layout of typical Toilet and its connections for main Network.   10 Marks

*** End ***

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103
End Semester Examination – OCTOBER - 2018

Branch: B. Arch

Subject: -HISTORY OF ARCHITECTURE-III

Marks: 60　　　　　　　　　　　　　Date: - 24-10-2018

Sem.:- III

Subject Code: - AR20030005

Time: - 3 Hrs.

Instructions: - *1. Question No.01 is Compulsory*

2. Answer any four from the remaining

Q. 1　Answer the following:　　　　　　　　　　　　　　　　　　　10 Marks

A)　Fill in the blanks.

1) The *Quibla* wall is the wall facing this _____ direction in India.
(North, South, East, West)

2) _____ was a famous architect of Ottoman Empire.
(*Ustad Ahemad Lahouri, Ustad Isa, Mimar Sinan, Baha-Al-Din-Al-Amini*)

3) _____ is an example of Triple dome structure.
(St.Pauls London, Florence Cathedral, Pazzi Chapel, St.Andrea Mantua)

4) _____ is a famous example of urban Italian renaissance residential architecture.
(Villa Madma Rome, Villa Rotunda, Chateaux de Chambord, Medici Palace)

5) _____ is the only example of a mosque having three sanctuaries.
(*Bibi Khanum Mosque, Shehajade* Mosque, Great Mosque of *Muttavakil*, Mosque at Cordoba)

B)　Define following　　　　　　　　　　　　　　　　　　　　　10Marks

1) What is *Rouza,* give one example.

2) What is meant by *Kosh* ?

3) One example of *Azetec* city.

4) What is the meaning of the Portuguese Term *Perola Barroca.*

5) Which is the example of Piazza Oblica.

Q. 2　Solve Any One　　　　　　　　　　　　　　　　　　　　　10 Marks

A.　Write a short note on developments of domes during Renaissance Architecture.

B.　Compare French Renaissance with English Renaissance with respect to residential architecture.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD – 402 103
EndSemester Examination – August – 2018

Branch: B. Arch (Second Year Architecture)   Semester: III

Subject: Architectural Design III   Marks: 60

Subject Code: AR20030001

Date: 16 / 08 / 2018   Time: 6 Hrs.

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Instructions: 1. All Questions are compulsory.
                 2. Do not erase construction lines.
           3. Solve all questions on drawing sheets.

Q – 1   (60 Marks)

Orthopaedic Clinic in Thane

A well-known OrthopaedicSurgeon wants to set up his new clinic in Thane west. The surgeon is already practicing in a reputed corporate hospital for the last 15 years. Now he wants to set up his own clinic on his ancestral land. The site is adjacent to Ghodbunder road in residential area. There are many high rise townships being launched in the area and hence the need for medical facilities. Due to increase of Patients in large number as well as some convenience problems in old hospital area in Thane he want to set up his new clinic. As part of requirement of the Doctor, the Clinic shall be designed as maximum two floor structure with scope of future extension for Doctor's own residence on upper floors.

Students are supposed to provide an innovative solution for the requirements mentioned below with unique approachand due consideration to the functional aspects of medical field.

•   Proposed Design Site
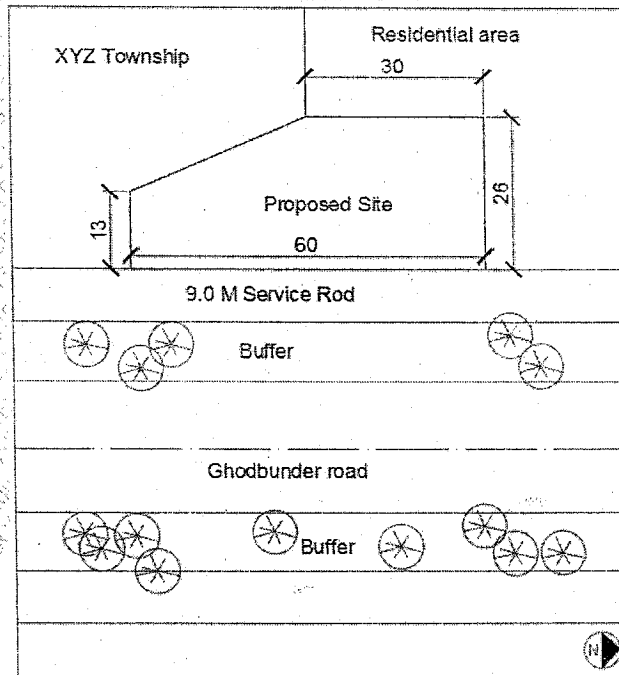
DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY

Mid Semester Examination – August - 2018

Course: B. Arch (Second Year Arch.)   Sem: III

Subject Name: Building Construction Technology and Materials-III (AR20030003)

Max Marks: 60   Date:- 18/08/2018   Duration:- 3 Hr.

Instructions to the Students:
1. All Questions are compulsory.
2. Draw neat sketches wherever necessary.
3. Do not erase construction lines.

	Marks
Q. 1 Write short Notes on following: (Any Four) 5 x 4 = 20 Marks	20
(A) Defects in Timber	05
(B) Plywood	05
(C) Properties and laying of Terra-cotta tiles	05
(D) Admixtures	05
(E) Sealants	05
(F) Plastic Emulsion Paints	05
Q. 2 Draw the neat sketches of the following: (Any Four) 5 x 4 = 20 Marks	20
(A) Tongue and Groved joint	05
(B) Mortise and Tenoned joint	05
(C) Oblique Tenon joint	05
(D) Dove Tail joint	05
(E) Lap joint	05
(F) Lengthening joint	05
Q. 3 Explain the method of application of following: (Any Two) 5 x 2 = 10 Marks	10
(A) Sand face plaster to external wall	05
(B) Neeru finish (Sanla) plaster to internal wall	05
(C) Cement paint to external wall	05
(D) Oil bound Distemper	05
Q.4 Solve any two of the following: (Any Two) 5 x 2 = 10 Marks	10
(A) Why water proofing is required and where you will suggest it in building construction?	05
(B) What are the qualities of Timber?	05
(C) What is Veneer and what are the advantages of it?	05
(D) What is Varnish and What are the advantages of it?	05

End

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY

Mid Semester Examination – August - 2018

Course: Second Year (B. Arch) Sem: III

Subject Name: Building Services-1 **Subject Code: AR20030004**

Max Marks:20 **Date:- 20/08/2018** **Duration:- 1 Hr.**

Instructions to the Students:
1. Question No.1 is compulsory
2. Attend any one out of remaining questions
3. Draw neat and properly labeled sketches wherever required.

Marks

Q. 1 (A) Write short notes on the following (Attempt any 5) 1 X 5 = 5
  a. Explain in short the factors affecting per capita demand.
  b. Explain ferrule connection and its significance.
  c. Do comparison between 'direct and indirect distribution system' of water supply.
  d. List different types of valves used in distribution system along with their purpose.
  e. Draw a neat sketch of typical R.C.C. Over Head Tank along with its complete accessories.
  f. Neatly Sketch the complete water cycle and list out different sources of water

(B) Fill in the blanks (Attempt any five) 1 X 5 = 5
  1. Pressure, in a pipeline, is directly proportional to _____ .
     (density/ depth/ velocity)
  2. In a service connection _____ absorbs the adverse stresses coming from the water main.
     (ferrule/ goose neck/ water meter)
  3. In a water supply scheme _____ is required to make gravity function easy.
     (height/ flow/ air vent)
  4. In RCC over head tank, at every pipe connection, to avoid the scope of leakages, _____ plays an important role. (sealants/ puddle flanges/ valves)
  5. In a water supply system for high rise building, to maintain air- water ratio, every pneumatic tank should be attached with _____ .
     (air compressor/ safety valve/ vacuum relief valve)
  6. In a suction tank _____ is required to empty the tank for cleaning purposes etc. (man hole/ float valve/ sump pit)

Q.2 (A) Explain with the help of neat sketches, water supply scheme in general with respect to following elements: 5
  a.) Basic principles of plumbing
  b.) Plumbing Architecture
  c.) Typical plumbing layouts

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY

Mid Semester Examination – August - 2018

Course: B. Arch Semester: III

Subject: HISTORY OF ARCHITECTURE – III Subject Code: AR20030005

Max Marks: 20marks Date:21-08-2018 Duration: 1 Hr.

Instructions to the Students:
1. All Questions are compulsory.
2. Draw sketches wherever necessary.
3. Write neatly and clearly.

	Marks

Q. 1 Answer the following: 4x2=8
(A) Discuss the architectural developments during the provincial style in Malwa region.
(B) Explain the Mughal concept of "Tomb in the garden" with a relevant example & sketches.

Q.2 Attempt any TWO of the following: 4x2=8
(A) Describe the architectural features of any one Maratha fort in India.
(B) Explain the palaces built during the Ottoman rule with an example.
(C) Write a note on the works of Filippo Brunelleschi.

Q. 3 Answer the following:
(A). Differentiate between Diwan-i-Am & Diwan-i-Khas. 2

(B) Fill in the Blanks
i. Who is known as the Renaissance man _____ 1
   a. Michelangelo
   b. Leonardo da Vinci
   c. Donate Bramante
   d. Raphael

ii. Tomb of **GHIYAS-UD-DIN TUGHLAQ** is built by _____ 1
   a. Khilji Dynasty
   b. Tughlak Dynasty
   c. Sayyad Dynasty
   d. Lodhi Dynasty

End

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY

Mid Semester Examination – August - 2018

Course: B. Arch   **Sem: III**

S ubjec: Theory of structures

Max Marks: 20   **Date:- 23/08/2018**   **Duration:- 1 Hr.**

Instructions to the Students:
1. Attempt Q.1 and Q.2
2. Figure to the right indicates full marks
3. Assume suitable data, if necessary and clearly state
4. Use of electronics pocket calculator is allowed

Marks

Q. 1 a) Define following Terms:
(A)   i) Stress and Strain   1
      ii) Hook's Law   1
      iii) Modulus of rigidity   1

      b) Draw stress strain diagram for ductile materials   3

(B) A rod of 150cm long & of diameter 2cm is subjected to axial pull of 20KN if the modulus
     of elasticity of material of rod is 2×10^5 N/mm^2 Determine stress, strain & elongation of   4
     rod.

Q.2 (A)   a) Define following Terms: 1
          i) Pure Bending   1
          ii) Section Modulus   1
          iii)Neutral Axis and Moment of Resistance

          b) Draw shear stress distribution for following sections   3
          i) I Section ii)T section iii) Rectangle Section iv) Hollow Circular Section

(B) A rectangular beam 100mm wide and 250 mm deep is subjected to maximum shear force of   4
     50KN.Determine i) Average shear stress ii) Maximum Shear Stress iii)Shear Stress at a
     distance of 30mm above the neutral Axis

End