Dr. DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,

LONERE – RAIGAD – 402 103

Winter Semester (Supplementary) Examination – Dec – 2018

Course: B. Arch | **Semester: II**

Subject with Subject Code: Environmental Science-2 AR10200004 | **Marks: 60**

Date: 06/ 12/ 2018 | **Time: 3 Hrs.**

F.Y. B.Arch. 6/12/2018
Environmental science-2
(AR10200004)

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

Q. No. 1 Answer the following: (LONG ANSWER QUESTION) **(15 Marks)**

A) Explain the term Forest Ecosystem. What are the uses of forests? Describe any one type of Forest Ecosystem in detail.

No. 2 Attempt any ONE of the following: (LONG ANSWER QUESTION) **(15 Marks)**

A) Do you think that Sustainable Architecture is necessary in today's world? Mention in detail any two methods used in Sustainable Architecture.

B) What are the techniques of Rainwater Harvesting? Explain any three with the help of sketches.

Q. No. 3 Attempt any FOUR of the following: (SHORT ANSWER QUESTION) **(20 Marks)**

A) Need to conserve Biodiversity.
B) Environmental Conservation Movement. (Any 1)
C) Depletion of Ozone layer.
D) Techniques of Waste Water Management. (Any 2)
E) Global Climate Change.
F) An Environmental activist and his / her contribution. (Any 1)

Q. No. 4 Answer the following: (Any 5) **(5 x 2 = 10 Marks)**

A) Define the Term Ecological Planting.
B) Define the term Lithosphere.
C) State the Biotic Components of environment.
D) Mention any two effects of Human activities on Environment.
E) Enlist any four Biogeographic Zones of India.
F) Mention any two uses of Grassland.
G) Explain the term Check dams.

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

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,

LONERE – RAIGAD – 402 103

SUPPLEMENTARY Examination – Dec – 2018

Course: B. Arch **Semester: II**

Subject: Architectural Drawing and Graphics – II (Manual) **Subject Code:** AR10200002

Date: 04/12/ 2018 **Marks: 50** **Time: 3 Hrs.**

Instructions:

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

Q. 1 Draw plan, elevation and isometric view of pentagonal pyramid of base 40mm side and axis 80mm, having its base horizontal and an edge of the base parallel to the V.P. **(10 Marks)**

OR

Q. 1 Draw the Isometric view of the object from figure A- **(10 Marks)**

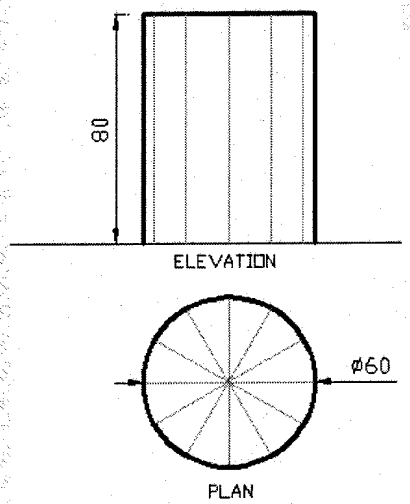

Figure A

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Q. 2 Attempt any ONE of the following: (20 Marks)

a) Draw the perspective view of a hexagonal pyramid base 30mm side and axis 70 mm long. The station point is 80mm away from the picture plane and 20mm to the left from the centre of the object. The horizon line is 60mm above the Ground line. The centre of the object is 20mm behind the picture plane and one of its face is 45° to picture plane.

OR

b) Draw Two point Perspective view from the following figure B -

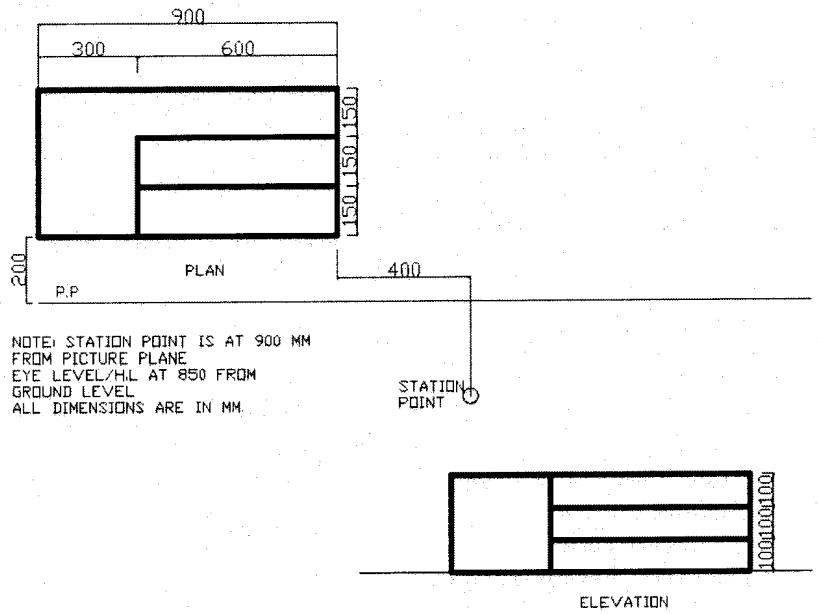
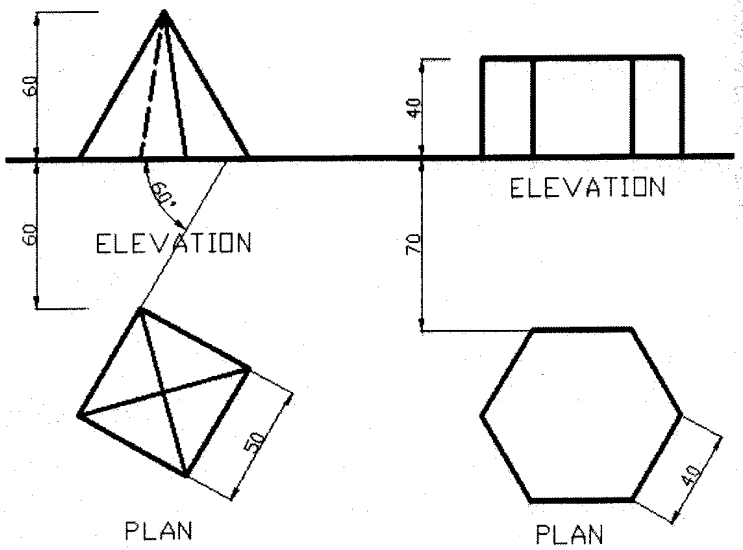


Figure B

Q. 3 Attempt any ONE of the following: (20 Marks)

a) Cast the sciography of the following objects assuming the light rays at 45° both in plan and elevation.



OR

b) A square pyramid of base side 40 mm and height 60mm is kept centrally over a square prism of base side 60mm and height 20mm. Draw the plan and elevation and cast the shadow pattern using conventional light direction (45°). Assume suitable dimensions wherever required.

----- BEST OF LUCK -----

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

Course: B. Arch **Semester:** II
Subject and Subject Code: ADS-II (AR10200001)
Date: 10/12/2018 **Marks:** 60 **Time:** 6 Hrs.

(60 Marks)

Q.1

Doctor's Residence in Nasik

A well-known doctor in Nasik owes a plot in residential locality. He wishes to construct a modern residence fulfilling his family requirements and as well his professional need, to serve his locality patients. A good looking shading canopy to shade his vehicles and attractive landscape around his residence is what the doctor is expecting.
The plot is abating with roads on two sides of 12.0 M and 9.0 M respectively.

Requirements:

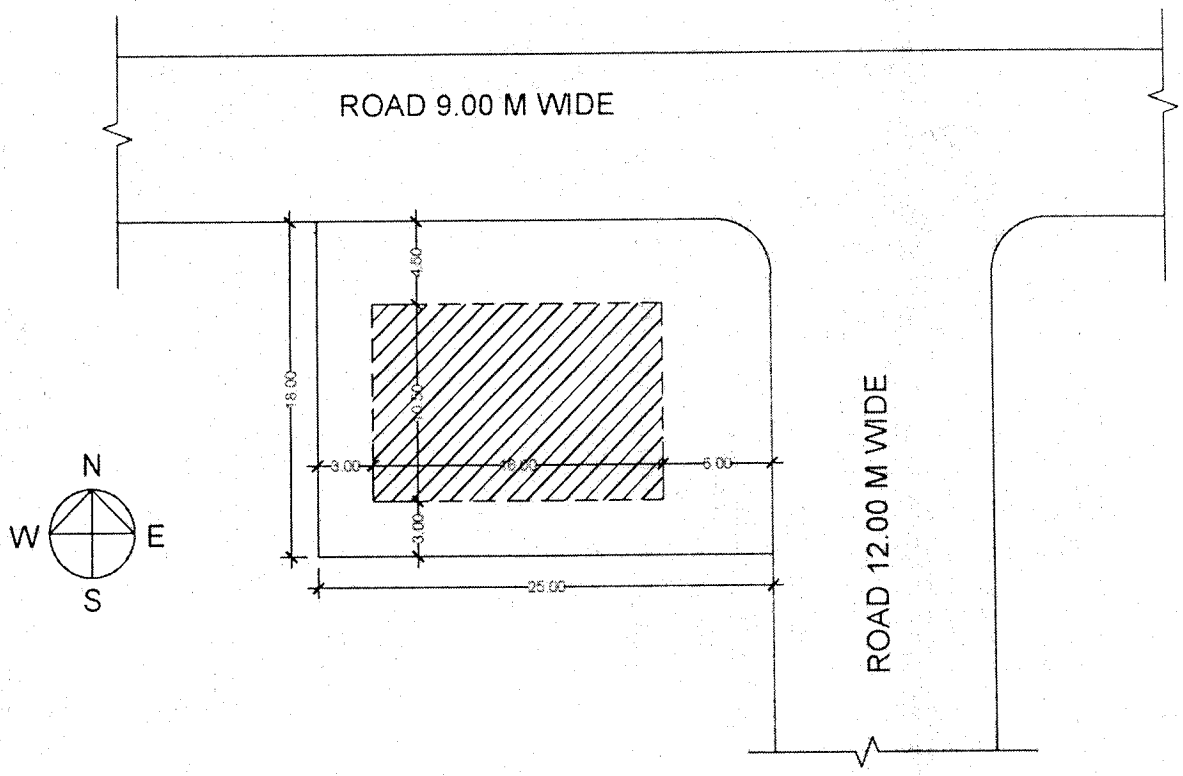
1. Entrance Verandah - 4 sq. m.
2. Living Room - 25 sq. m.
3. Dining - 10 sq. m.
4. Kitchen/Store/Utility - 20 sq. m.
5. Master Bedroom (Attached Toilet) - 25 sq. m.
6. Children Bedroom (Attached Toilet) - 20 sq. m.
7. Clinic - 12 sq. m.

Staircase location, outdoor seating spaces, canopies, porch/patio etc. are to be provided as per your design.

Drawing Requirement:

1. Site Plan - 1:100 showing building block and surrounding landscape.
2. Concept, Pre-design sketches.
3. Ground Floor Plan - 1:50
4. Elevation (Any one road side) - 1:50
5. Section (Through Toilet) - 1:50
6. Sketch exterior view of residence (Not to Scale) or Any other furniture sketches. **(Not Compulsory)**

P.T.O.


ROAD 9.00 M WIDE
ROAD 12.00 M WIDE
4.50
18.00
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*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD – 402 103

Winter Semester Examination – Dec 2018

Course: B. Arch **Semester:** II

Subject and Subject Code: History of Architecture –II (AR10200005)

Date: 08-12-2018 **Marks:** 60 **Time:** 3 Hrs.

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

Q. 1 Answer the following: (LONG ANSWER QUESTION) (15 Marks)

A) Explain the characteristic features of Gothic architecture with an example and sketches.

Q. 2 Attempt any ONE of the following: (LONG ANSWER QUESTION) (15 Marks)

A) Write a note on Romanesque architecture. Discuss the salient features, give an example with elaborative sketches

B) Explain how the rise and spread of Christianity has affected the architecture of Europe. Support with an example and sketches.

Q. 3 Attempt any FOUR of the following: (SHORT ANSWER QUESTION) (20 Marks)

A) Write a short note on Ajanta caves.

B) Write a short note on temples built during early Chalukyan period.

C) Explain briefly about different types of shikaras.

D) Write a note on Chandela temples at Khajuraho.

E) Briefly explain what is Greek cross and Latin cross.

F) Write short note on Rathas of Mahabalipuram.

Q. 4 Explain the following: (5 x 2 = 10 Marks)
(Single Line Answer / Objective Types Questions)

A) Minaret.

B) Clearstorey window.

C) Narthex

D) Gopuram

E) Mihrab

F) Tympanum

G) In gothic church, what is the purpose of the flying buttress?

----- END -----

Dr. DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,

LONERE – RAIGAD – 402 103

Winter Semester (Regular) Examination – May – 2018

Course: B. Arch **Semester: II**

Subject: Building Construction Technology and Materials-2

Subject Code: AR 10200003

Date: 05/12/2018 **Marks:** 50 **Duration:** 3 Hrs.

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

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Q. No. 1	**Solve any TWO of the following:**	(10 Marks)
A)	Describe raw material used for glass and any 2 types of glass.	(5 Marks)
B)	Describe types of steel and where it is used in building industry?	(5 Marks)
C)	Describe different forms of plastic in building industry?	(5 Marks)
	OR	
Q. No. 1	**Solve any TWO of the following:**	(10 Marks)
A)	Describe mixing of concrete?	(5 Marks)
B)	Describe manufacturing process of Steel.	(5 Marks)
C)	What are advantages of aluminum?	(5 Marks)
Q. No. 2	**Attempt any ONE of the following:**	(20 Marks)
A)	i) What are advantages of polymers in building industry?	(5 Marks)
	ii) Describe reinforced cement concrete.	(5 Marks)
	iii) Explain with a neat sketch various Structural sections used in building industry. What is the IS nomenclature used to describe Beams, Channels, Tees, Angles, etc.	(10 Marks)
	OR	
B)	i) Describe water cement ratio and workability of concrete.	(5 Marks)
	ii) What are different materials used for wall cladding.	(5 Marks)
	iii)What are the different types of concrete? Describe different tests done to identify strength of concrete.	(10 Marks)
Q. No. 3	**Attempt any ONE of the following:**	(20 Marks)
A)	i) Draw a neat well annotated sketch section through an external wall showing details from foundation to roof level.	(10 Marks)
	ii) What are disadvantages of solid wall. Describe Rat Trap bond in detail.	(10 Marks)
	OR	
B)	i) What are advantages of composite wall and care to be taken while construction.	(10 Marks)
	ii) Draw neat sketches showing details of cavity wall at plinth and parapet level.	(10 Marks)

END OF PAPER

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination Dec - 2018

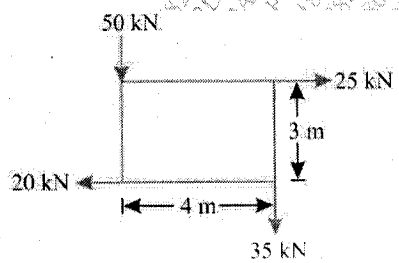
Course: B. Arch **Sem:** II
Subject with code: Theory of Structures – I (AR10200006S)
Date: 14/05/2018 **Marks -** 60 **Duration:** 3 Hrs.

Instructions:

1. *All questions are compulsory.*
2. *Neat sketches must be drawn wherever necessary.*
3. *Figures on the right indicate full marks.*
4. *Use of scientific calculator is allowed.*

Q.1 (a) Define and explain Parallelogram Law of Forces (4)

(b) A system of forces are acting at the corners of a rectangular block as shown in the figure.

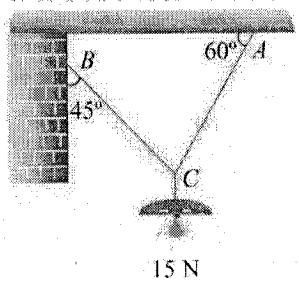


Determine the magnitude and direction of the resultant force. (6)

OR

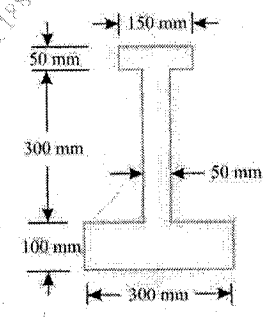
Q.1 (a) Define system of forces. (3)

(b) An electric light fixture weighing 15N hangs from a point C, by two strings AC and BC. The string AC is inclined at 60° to the horizontal & BC at 45° to the vertical as shown. Using Lami's Theorem, determine the forces in the strings AC and BC. (7)



Q.2 (a) Define Center of Gravity. (3)

(b) Determine the center of gravity of an I-section with dimentions as shown in the figure.

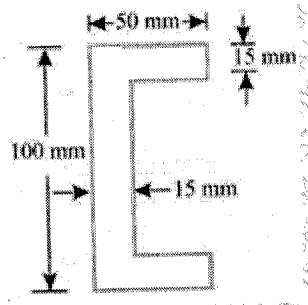


(7)

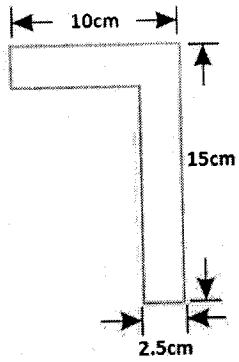
OR

Q.2. (a) What is the Center of Gravity of (i) Rectangle (ii) Semi-Circle (iii) Triangle (3)

(b) Find the Center of Gravity of a channel section 100mm × 50mm × 15 mm (7)



Q.3. (a) Find the Moment of Inertia about the centroidal X-X and Y-Y axes of an inverted L-section 15cm × 10cm × 2.5cm (15)

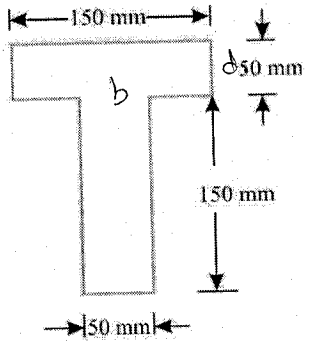


(b) Define Point Load, UDL and Uniformly Varying Load. (5)

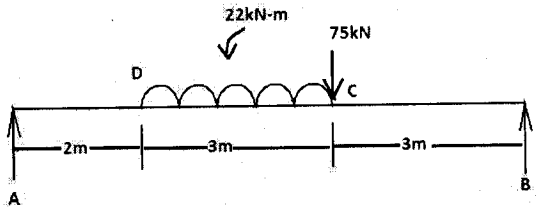
OR

Q.3. (a) What is (i) Simply supported beam (ii) Over hanging beam (iii) Continuous Beam (iv) Fixed beam (v) Cantilever beam (5)

(b) Find the Moment of Inertia of a T-section shown in the figure about X-X and Y-Y axes through the center of gravity of the section (15)



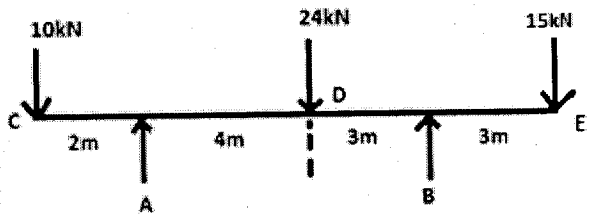
Q.4. (a) For beam loaded as shown in the figure, Draw Shear Force Diagram and Bending Moment Diagram. (15)



(b) What is the point of Contraflexure? Explain with Diagram. (5)

OR

Q.4. (a) For overhanging beam, determine support reactions at A and B. Draw Shear force diagram and Bending Moment Diagram. Find the point of contraflexure (20)



*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE
End Semester Examination – DECEMBER - 2018

Course: B. Arch
Subject: Architectural Drawing and Graphics – 1
Date: - 03 -12 -2018 **Marks: 50**

Sem.:- 1
Subject Code: - AR10100002
Duration: - 3 Hrs.

Instructions: - *1. The First question is compulsory.*
2. Do not erase the construction lines.
3. Assume suitable data wherever necessary.

Q. No. 1 Solve any TWO of the following **10 Marks**

a) Inscribe a regular heptagon in a circle of diameter 80mm.

b) Divide a straight line of length 100mm and divide it in 15 equal parts.

c) Inscribe a regular Pentagon in circle of diameter 70mm.

Q. No. 2 Solve any ONE of the following **20 Marks**

a) Draw the projections of a cone, base 40mm diameter and axis 60mm long, when it is resting on the ground, on a point on its base circle with the axis making an angle of 30° with H.P.

OR

b) A square pyramid, having base 50mm side and axis 70mm long, has its base on H.P. and its two sides (base sides) parallel to V.P. It is cut by a section plane, perpendicular to V.P. and inclined at 45° to the H.P. and bisecting the axis. Draw its sectional plan, elevations and true shape of section.

Q. No. 3 Solve any ONE of the following **20 Marks**

a) A hexagonal pyramid, of base 35mm side and axis 80mm long, resting on its base on the H.P. with its two sides (base sides) parallel to V.P. It is cut by two section planes, both perpendicular to V.P. The horizontal section plane cuts the axis at a point 40mm from apex. The other plane which makes an angle of 45°with H.P. , also intersect the axis at the same point . Draw sectional plan, elevations and development of surface of the remaining part of the pyramid.

OR

b) i. Draw the development of the surface of Pentagonal pyramid of side 30mm and axis 50mm long.

ii. Draw development of surface, of the cylinder having diameter 40mm and height 60mm.

***** End*****

B) **Attempt any two of the following (Short answer Question) :** **(5 x 2 = 10 Marks)**

a) What do you understand by Bioclimatic Chart?
b) Explain Global Wind Pattern.
c) Explain Heat Transfer through Conduction , Convection & Radiation.
d) What are the factors of environment affecting building form?

Q.No. 3: Attempt any one of the following (Long answer Question) : **15 Marks**

A) What do you understand by Psychrometric charts? Explain all the terms involved in Psychrometric chart.

B) What do you understand by Passive design strategies? Define and Explain with Sketcheshow we can achieve Passive Heating, Passive Cooling and Passive Ventilation in a building ?

Q.No. 4 :Answer the following (Long answer Question) : **15Marks**

What are the major climatic Zones in India? Explain the characteristics of a Warm Humid Climatic Zone in detail, along with climate design recommendations for designing shelters in such regions. Illustrate with sketches.

***** End *****

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

Branch: B.Architecture (First Year Architecture) **Semester :I**
Subject:-Environmental Science –I (Focus on built form) **Marks: 60**
Subject Code: - AR10100004
Date: - 05 - 12 -2018 **Time: - 3 Hour.**

Instructions: - 1. All questions compulsory
2. Draw sketches wherever necessary.

Q.No. 1: True or False (Solve any 5) 10 Marks

a) The temperature of ocean currents affects the climate of nearby landmasses.
A .True
B.False.

b) Earth relieves the most direct sunlight at the poles.
A.True
B.False

c) The shape of landforms influences the flow of wind and ocean currents.
A.True
B.False.

d) Passive design strategies use ambient energy sources instead of purchased energy like electricity o natural gas.
A.True
B. False.

e) Active design is a system or structure that uses or produces electricity.
A.True
B.False.

f) Climate is like weather but over a large period of time.
A. True
B. False

Q.No. 2: A)Differentiate between: (Attempt any 2) **(5 x 2 = 10 Marks)**

a) Climate & Weather.
b) Tropical Region &Temperate Region.
c) Precipitation & Humidity.
d) Altitude angle & Azimuthal angle.

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE – RAIGAD -402 103

End Semester Examination – OCT/NOV - 2018

Course: B. Arch
Subject: Architectural Design I
Date: 07/12/2018

Semester: I
Subject Code: AR10100001
Marks:- 50

F.Y. B.(Arch) 7/12/20
(AR10100001)
Architectural design -I

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

Q. No.1 **50 Marks**

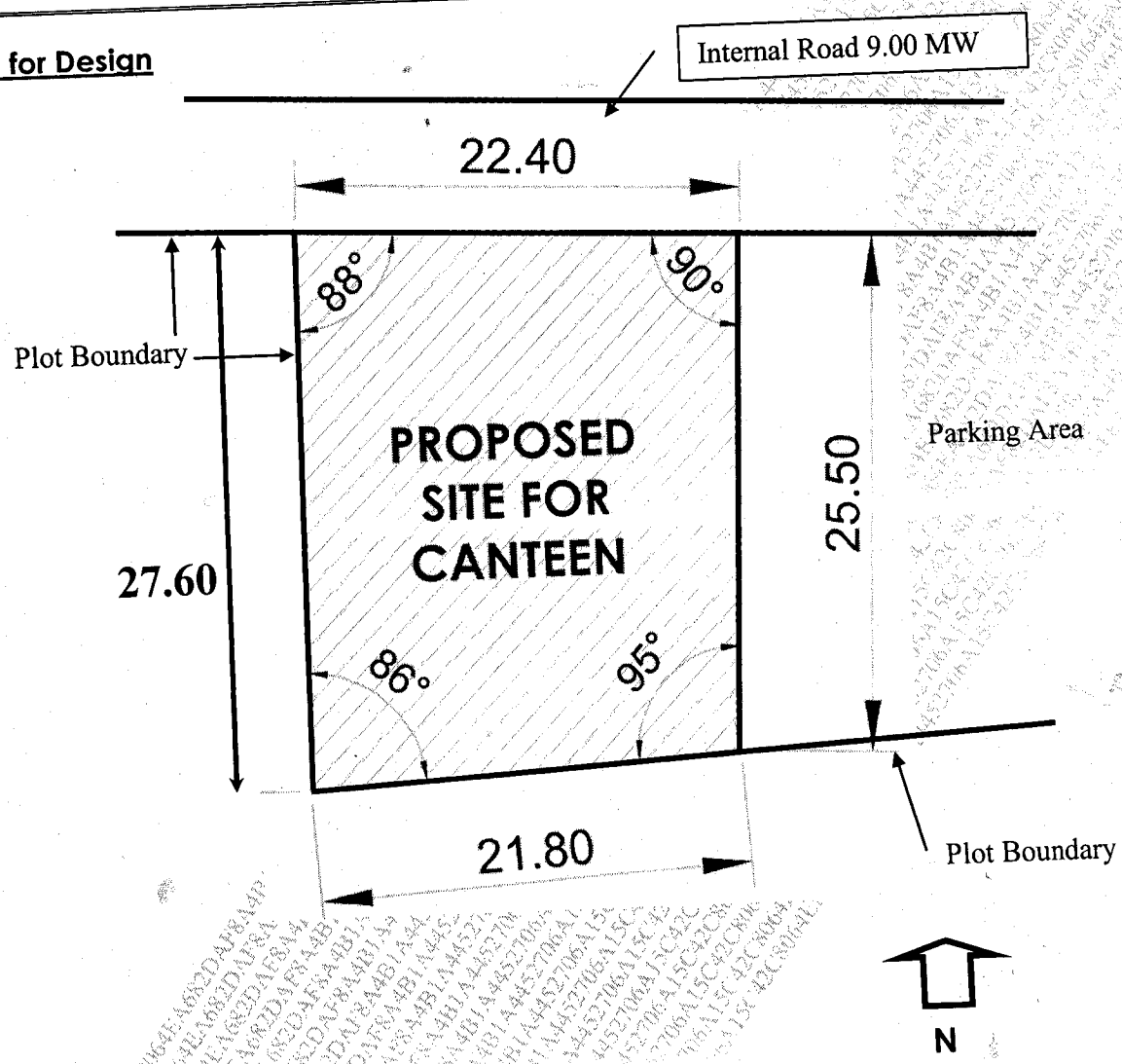
The new Architecture College being set up in Shikrapur, Pune would like to design and build a Canteen Area into its campus. The Site has a pleasant climate, proximity to Pune and connectivity with and via Pune -Ahmednagar National Highway. The College wants its canteen area to be impressive and striking in architectural context, the same shall be reflected in the design too.

The canteen will have open and covered sitting areas along with kitchen and utilities services with a capacity of 35 students. Spaces of the canteen area should be interactive and designed with the consideration of architectural college point of view. The canteen having an area around 50 – 60 sq. Meter (600Sq. feet) within college campus. Students need to provide innovative solution considering the architectural context and up to the scale, proportions, anthropometry according to standard of design.

The requirements for Canteen are as below: (Total 60 Sq.m.)

Sr. no.	Requirement	Area in SQ.M.
1	Sitting Area – Covered/semi open	30
2	Sitting Area – Open	Adequate
3	Kitchen area	20
4	Storage	05
5	Utility area	05
6	Other Suitable Data	Adequate

- **Site for Design**



- **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 sketches (optional) 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.

*** End ***

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

End Semester Examination – December- 2018

Course: B. Arch **Semester: I**

Subject Name with Subject Code: -HISTORY OF ARCHITECTURE-I (AR 10100005)

Date: 06-12-2018 **Marks: 60** **Time: - 3 Hours.**

Instructions:
1. **All Questions are compulsory.**
2. **Draw sketches wherever necessary.**

Q. No.1: Answer the following with appropriate sketches: (Any-1) (15 Marks)

A) Sketch and elaborate the Structural innovations achieved by the Romans.

OR

B) Describe with appropriate sketches any two Prehistoric dwellings.

Q. No.2: Answer the following with sketches appropriate sketches. (Any-1) (15 Marks)

A) Along with appropriate sketches describe the column orders in Greek Architecture.

OR

B) Sketch and explain the Pyramid complex at Giza.

Q. No.3:- Write short notes on: (Any 4) (20 Marks)

a) Stupa at Sanchi.
b) Catalhuyuk.
c) The Great bath and Granary in Indus valley civilization.
d) The White temple at Uruk.
e) Pantheon, Rome.
f) The Mayan Pyramids.

Q. No.4:- Fill in the Blanks: (5 Marks)

a) The architect of Zoser's Pyramid is _____.
   I. Ramases.
   II. Imhotep.
   III. Cheops.
   IV. Nefertiti.

b) The Mesopotamian civilization started along _____.
   I. Nile.
   II. Tigris and Euphrates.
   III. Indus.
   IV. Huang he and chang Jiang.

c) The Temple of Aphaia at Aegina is a _____ temple.
   I. Ionic order.
   II. Tuscan order.
   III. Doric order.
   IV. Corinthian order.

d) _____ city was used as a dockyard and warehouse in Indus valley Civilization.

I. Dholavira.
II. Lothal.
III. Rupar.
IV. Ganeriwala.

e) Circus Maximus was developed by Romans for _____.

I. Chariot racing.
II. Gladiator fights.
III. Acting and Drama.
IV. Political activities.

Q. No.5:- Arrange the following in Descending to Ascending order: (5 Marks)

a) The mounds.
b) Stepped Pyramid.
c) The Great Pyramid.
d) The Mastabas.
e) The Bent Pyramid.

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Semester Examination – December – 2018

Course: B. Arch. **Semester: I**

Subject: Building Construction Technology and Materials –I **Subject Code:** AR10100003

Date: 04/12/2018 **Marks:** 50 **Duration:** 2 Hrs.

Instructions: *1.All questions carefully*
2. Neat sketches must be drawn wherever necessary
3. Figures to the right indicate full marks.

Q. No. 1. Solve any TWO of the following **(10 Marks)**

A. Describe properties of good building stone. Briefly explain any 2 types of common building stones. **(5 Marks)**

B. Describe Coarse Aggregate and Fine Aggregate. **(5 Marks)**

C. Describe Initial and Final Setting time of the cement. **(5 Marks)**

OR

Q. No. 1. Solve any TWO of the following **(10 Marks)**

A. List different tests done to check quality of bricks. Explain any 2 tests **(5 Marks)**

B. Describe Fat lime and Hydraulic lime **(5 Marks)**

C. List Types of sand and Describe Bulking of sand **(5 Marks)**

Q. No. 2. Attempt any ONE of the following

A. Describe manufacturing process of Bricks from raw materials to final product **(5 Marks)**

B. Describe concrete and its ingredients. List various grades of concrete **(5 Marks)**

C. Describe Sub-Structure and Super-Structure. Draw neat, properly annotated sketch of any 5 elements seen in super structure. **(10 Marks)**

OR

A. Describe any 3 types of soils. **(5 Marks)**

B. Describe process of manufacturing Lime in brief. **(5 Marks)**

C. Describe plinth construction in Load Bearing wall type structure with neat properly annotated sketch of section.
Write note about importance of DPC **(10 Marks)**

Q No. 3. Attempt any ONE of the following

A. 1.Draw a neat well annotated sketch of "T Junction", one brick wall in English and Flemish bond **(10 Marks)**

2. Describe different stone masonry bonds. What is Uncoarsed Rubble and Ashlar Masonry. Describe with sketch showing elevation. **(10 Marks)**

OR

B. 1.Draw a neat well annotated sketch of Semi-circular arch (brick or stone) Explain importance of key stone with the help of load transferring diagram **(10 Marks)**

2. Describe difference between Shallow and Deep foundation. Draw neat sketches of Isolated and Combined foundations. **(10 Marks)**

***** End *****