2/28

2903N477

Candidate's Seat No :_____

B. Arch. (Sem.-4) Examination

AR 402

Building Construction-4

March 2019

Time : 2-30 Hours] **[Max. Marks : 100**

Instruction : Figures to right indicates full marks.

1 Differentiate between single joist, double joist & triple joist floor along with neat sketches. 20

OR

Draw plan, section of straight hight concrete staircase of width 1.5 m for a library building having floor to floor mt. of 3 m.

2 What are the advantages of skylight? Where is it used? Explain any two types of skylight in brief. 10

3 Explain functional & acsthetical use of any two of the following : 15

(a) Terrarro flooring
(b) Brick flooring
(c) IPS flooring.

4 Explain terms in brief (any four) : 20

(a) Eaver
(b) Gutter
(c) Nasing
(d) Railing
(e) Klaist slab
(f) Soffit.

5 Explain any three : 15

(a) Lean to roof
(b) Brick bat coba
(c) Collar roof
(d) King post trass.

6 Write short notes (any four) : 20

(a) One way slab
(b) Concrete jack arch
(c) Flat slab
(d) Compasite slab
(e) Two-way slab.

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NU77-2

1. Draft first floor plan and section of a single joisttimber floor, 3mX5m of span along with necessary details. (Scale 1:20) (20)

OR

1. Explain different types of RCC slab in detail with the help of sketches.
2. Define: (any 10) (20)
   a. Binders
   b. Joist
   c. Eaves
   d. Herringbone joist
   e. Truss
   f. Ridge
   g. Rafters
   h. Purlin
   i. Wall plate
   j. Strut
   k. Hip roof
3. Difference between (Any 4) (20)
   a. King post roof and Queen Post roof
   b. Wooden truss and steel truss
   c. One way slab and Two way slab
   d. Couple roof and Closed couple roof
   e. Pre tension and post tension
4. Answer the following in brief(any 4): (20)
   a. Enlist different types of steel truss according to span
   b. Enlist different types of single roofs
   c. Explain RCC floor construction through a section
   d. Enlist different flooring materials
   e. Enlist different steel floors according to the base
5. Sketch the following (Any 4): (20)
   a. Dormer window
   b. Jack arch floor
   c. Waffle slab
   d. Mortice and tenon joint
   e. North light

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3003E1917

Candidate's Seat No :_____

B.Arch. (Sem.-4) (N.S. 2015 + 2015K) Examination

AR 403

Structure-4

Time : 2-00 Hours] **March 2019** **[Max. Marks : 50**

Instruction: 1. Assume suitable data if necessary.
2. Use of scientific calculator, IS 456 and SP 16 are permitted.

Q-1 Answer the following (Attempt any five). (10)

(a) State and define the structural elements of a building.
(b) Define depth of neutral axis and lever arm.
(c) Define Over reinforced, Balance and Under reinforced section.
(d) Define cover and effective depth.
(e) State the different type of footing. Explain each footing with neat sketches.
(f) Difference between one way slab and Two way slab.
(g) Explain Partial Safety factors.

Q-2 Answer the following (Attempt any five). (5)

(a) Enlist the different types of load acting on structure.
(b) What is the minimum percentage of distribution steel in case of slab?
(c) What do you mean by M20 mix?
(d) Why steel is used as reinforcement?
(e) Explain Pedestal, short column and long column.
(f) Explain Mild steel bars and HYSD bars.
(g) State different types of loads acting on structure.

Q-3 Attempt any two. (10)

(a) A singly rectangular beam section 250 mm wide and 450 mm effective depth is reinforced with 3 nos. of 20 mm diameter bars at effective cover of 50mm. Find out the ultimate moment of resistance of the section. Use M20 concrete and Fe 415 grade of steel.
(b) Design a singly reinforced rectangular beam is subjected to a bending moment of 180 knm. Assume effective depth equal to twice the width of the beam. Use M20 concrete and Fe-415 grade of steel.
(c) Find moment of resistance of beam section 300mmX450mm effective depth reinforced with 2nos 20 mm diameter bars as compression reinforcement and effective cover of 50mm and 4nos 25 mm diameter bars as tension reinforcement, Use M20, Fe415.

P. T. O

E1979-2

Q-4 (a) Design a short axially loaded square column for a service load of 2000 KN. Use M20 Concrete and Fe415 grade steel. Assume 2% Longitudinal steel and sketch the reinforcement details. (7)

OR

(a) An R.C.C. column size 450mm X 450mm size carrying an axial load 1400 kN. Design an isolated square footing. The safe baring capacity of soil is 200 kN/m^2. Use M20 concrete and Fe415 grade steel. Also draw neat sketch of reinforcement detail. (7)

Q-5 (a) Design a simply supported roof slab for a library hall 10m X 3.50m clear in size. Consider imposed load of 3 kn/m^2. Concrete grade M20 and Fe415 grade steel. (8)

OR

(a) Design a two way slab for a prayer hall of 6m X4m clear in size. Supported on 350mm thick wall on four sides. Edges are simply supported and corners held down. Consider super imposed load is 4 kn/m^2. Consider M20, Fe415. (8)

Q-6 (a) Design a continuous one way slab having three equal spans of 3.5m each. Consider imposed load of 3 kn/m^2. Concrete grade M20 and Fe-415 grade steel. Also draw neat sketch of reinforcement details. (10)

OR

(a) Design a stair case having width of flight is 1.00 M., floor height is 3.00 M., height of riser is 150 mm, width of tread is 250 mm. Both the flights are equal. Use M20 concrete and Fe415 reinforcements. (10)

E1917-3

B. Arch. (Sem-IV) (2nd Year) Examination (Regular)
AR 403 (New Syllabus 2015)
Structure-IV

Time: 2 Hours **March - 2019** **Max. Marks: 50**

Instruction: 1. Assume suitable data if necessary.
2. Use of scientific calculator, IS 456 and SP 16 are permitted.

Q-1 Answer the following (Attempt any five). (5)

(a) Enlist the different types of load acting on structure.
(b) What is the minimum percentage of distribution steel in case of slab?
(c) What do you mean by M20 mix?
(d) Why steel is used as reinforcement?
(e) Explain Pedestal, short column and long column.
(f) Explain Mild steel bars and HYSD bars.

Q-2 Answer the following (Attempt any five). (10)

(a) Define depth of neutral axis and lever arm.
(b) Define Over reinforced, Balance and Under reinforced section.
(c) Define Nominal cover and effective depth.
(d) State the different type of footing. Explain each footing with neat sketches.
(e) Difference between one way slab and Two way slab.
(f) Explain Partial Safety factors.

Q-3 (a) Design a singly reinforced rectangular beam is subjected to a bending moment of 200kn.m. Assume effective depth equal to twice the width of the beam. Use M20 concrete and Fe-415 grade of steel. (05)

(b) Find moment of resistance of beam section 300mmX450mm effective depth reinforced with 2nos 20 mm diameter bars as compression reinforcement and effective cover of 50mm and 4nos 25 mm diameter bars as tension reinforcement, Use M20, Fe415. (05)

Q-4 (a) Design a short axially loaded square column for a service load of 3000 KN. Use M20 Concrete and Fe415 grade steel. Assume 1% Longitudinal steel and sketch the reinforcement details. (7)

OR

(a) An R.C.C. column size 500mm X 500mm size carrying an axial load 1600 kN. Design an isolated square footing. The safe baring capacity of soil is 200 kN/m^2. Use M20 concrete and Fe415 steel. (7)

E1974

Q-5 (a) Design a simply supported roof slab for a library hall 10m X 3.50m clear in size. Consider imposed load of 3 kn/m^2. Concrete grade M20 and Fe415 grade steel. (8)

OR

OR

(a) Design a two way slab for a prayer hall of 6m X4m clear in size. Supported on 350mm thick wall on four sides. Edges are simply supported and corners held down. Consider super imposed load is 4 kn/m^2. Consider M20, Fe415. (8)

Q-6 (a) Design a continuous one way slab having three equal spans of 3m each. Consider imposed load of 3kn/m^2. Concrete grade M20 and Fe-415 grade steel. Also draw neat sketch of reinforcement details. (10)

OR

OR

(a) Design a stair case having width of flight is 1.00 M., floor height is 3.00 M., height of riser is 150 mm, width of tread is 250 mm. Both the flights are equal. Use M20 concrete and Fe415 reinforcements. (10)

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0104E0009

Candidate's Seat No :_____

B.Arch. (Sem.-4) (N.S. 2015 + 2015K) Examination

AR 404

History of Architecture-3

Time : 2-00 Hours] **April 2019** **[Max. Marks : 50**

Instructions: (1) All Questions are compulsory.
(2) Use neat sketches to illustrate your answer.
(3) Assume suitable data wherever necessary.
(4) Figures on right indicate the full marks.

Q.1 Explain in details any 1 of following: **Marks 12**

Describe architecture of any three monuments at Fatehpur-Sikri in Uttar Pradesh. Explain with neat sketches.

OR

"The St. Peters Rome is a fusion of architecture, painting and sculpture into an amazing vision." explain the statement in detail with sketches.

Q.2 Write a short note on any 3 of following: (3 out of 5). **Marks 12**

a) Narrate the spread of Islam throughout the world and its cultural and philosophical influence on Architecture.
b) Describe the reasons behind rise of Renaissance in Italy. Also explain characteristics of Renaissance architecture with compatible sketches.
c) Explain in detail Gol Gumbaz at Bijapur. Illustrate the method of its dome construction.
d) List the characteristics of Baroque Architecture. Explain how Borromini has used these in San Carlo alle Quattro Fontane.
e) Describe architecture of Itmad-Ud-Daulla's tomb at Agra in Uttar Pradesh.

Q.3 Explain in details any 1 of following: **Marks 10**

Describe the salient features of any one regional style of Islamic architecture in India with suitable examples (at least two).

OR

What is the difference between Gothic architecture and renaissance style of building? Explain with sketches.

Q.4 Sketch the following with appropriate labeling. **Marks 10**

a) Hindola Mahal at Mandu
b) Santa Maria Novella at Florence
c) Jami Masjid at Fatehpur sikri
d) Brunelleschi's dome at Florence
e) Tempieto at Rome

Q. 5 Fill in the blanks. **Marks 06**

a. Basilica of Sant'Andrea, Mantua, was designed by _____
b. Jami Masjid at Champaner, is a fine example of _____ building style.
c. Sistine chapel ceiling at Rome is painted by _____.
d. Villa Rotonda / Villa Capra is designed by_____.
e. Flying buttresses are salient feature of _____ architecture.
f. Villa Fernese / Caprarola Palace, is designed by _____.

P.T.O.

E0009-2

BACHELOR OF ARCHITECTURE (B.ARCH)
YEAR – II SEM.-IV REGULAR EXAMINATION
HISTORY OF ARCHITECTURE –III (AR-404) (NEW SYLLABUS- 2015-K)

March 2019

TOTAL TIME: 2HOURS **TOTAL MARKS:50**

1. Answer the following Question with sketches where ever required: **(Any 3)** (30)
   a. Explain evolution and characteristics of Gothic architecture with example.
   b. Explain influences of Renaissance in Italy
   c. How was Romanesque architecture different than that of Gothic
   d. What are the main Features of Byzantine architecture? Explain giving example
   e. Explain how Michelanjelo has imparted mannerism in St. Peters Cathedral.
2. Write short note on **(Any 4)**:(20) (20)
   a. Sun temple Modhera
   b. Notre dame Cathedral
   c. Fatehpur Sikri
   d. Monasteries during Romanesque period
   e. St. Peters Basilica

x ——— x

0104E0010 Candidate's Seat No :_____

B.Arch. (Sem.-4) (N.S.) Examination

AR 404

History of Architecture-3

April 2019

Time : 2-00 Hours] **[Max. Marks : 50**

1. Write short note on **(Any 4):** (20)
   a. Sun temple Modhera
   b. Fatehpur Sikri
   c. Rani ni Vav, Patan
   d. Lingraja temple Khajuraho
   e. St. Peters Basilica

2. Answer the following **(Any 3)** (30)
   a. Explain how Michelanjelo has imparted mannerism in St. Peters Cathedral.
   b. Explain how Architecture developed during the reign of Akbar
   c. Explain Rococo style of Architecture and its interpretation in Italy
   d. Explain giving examples, how Baroque architecture developed in Italy

X ——— X

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0204E0025

Candidate's Seat No : _____

B.Arch. (Sem.-4) (N.S. 2015 + 2015K) Examination

AR 405

Building Services (Plumbing)

April 2019

Time : 2-00 Hours] **[Max. Marks : 50**

Instructions:

(1) All Questions are compulsory.
(2) Use neat sketches or calculations to illustrate your answer, if necessary.
(3) Figures on right indicate the full marks.

Q-1 Explain sources of Water **10**
Or
Garbage disposal

Q-2 write short notes on (Any two) **10**

i) Method of waste disposal
ii) Two pipe system
iii) Soak pit

Q-3 Explain Following Traps with sketches (Any two) **10**
a) Manhole
b) Gully trap
c) S.P and Q trap

Q-4 Explain following sanitary fittings.(Any two) **10**
a) Water closet
b) Bath tubs
c) Wash basin

Q-5 Draw typical arrangement of disposal of soil and Waste water from a residential building **10**

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E0025-2

B. Arch. (Sem.-IV)2ND year (Reg.)
AR 406 Building Services-I (New Syllabus 2015-k)
March- 2019

Time: 2 Hours | Max. Marks: 50

Instructions:

- All questions are compulsory
- Support your answer with sketches and figures if required
- Figures to the right indicate full marks

Q-1 Explain any two **[14]**
Natural and man-made sources of water
Water Supply for Multi storage system
General principles and types of Design of House drainage

Q-2 Defines the term with sketches (Any three) **[09]**
1. Gully trap
2. Flushing cistern
3. Floor trap
4. Rain water pipe
5. Water sill

Q-3 Explain the requirements for supplying water to different types of Buildings **[07]**

Or

Describe types of traps

Q-4 Explain following sanitary fittings with detail (any two) **[10]**
a) Wash basin
b) Water closets
c) Bath tubs

Q-5 Describe water supply system in kitchen and toilet by using diagram **[10]**

**********best of luck **********