SUBJECT CODE NO:- E-704
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch. Examination Nov/Dec 2017
A.B.C.M.IV
**(Revised)**

[Time: Four Hours] **[Max.Marks:100]**

Please check whether you have got the right question paper.

N.B
1) Answer any two question from sec. A and any three from sec .B
2) Answer to Sec A must be solved on drawing sheets only. Answer to Sec .B
   Must be solved in answer books
3) Assume suitable data wherever necessary and mention it clearly
4) Figures to the right indicate full marks.

Section A

Q.1 A G+1 residential bungalow is designed with RCC frame construction. Isolated and combine
footings are provided at 1.5m depth below ground level. RCC slab is provided as per the slab panel
ratio. Draw complete section of middle column from footing to parapet level. The size of the
column is 300 X 450 mm and RCC beams are rested on it from all 4 sides

   1) Draw key plan, elevation and of column with adjacent area   10

   2) Detail elevation and detail vertical cross section showing footing , column beam and slab   13
      with detail reinforcement

   3) Draw details of combine footing having 2 columns at 1.2m clear distance from each other.   12
      Draw its reinforcement detail in plan and elevation

Q.2 Design RCC continuous slab for a watchman's house having 2 rooms with attached toilet and
verandah. RCC frame structure with 230mm thick brick wall. Slab level RCC beams are provided.
Plinth level = 0.9m, slab height = 3.0m from plinth

2017
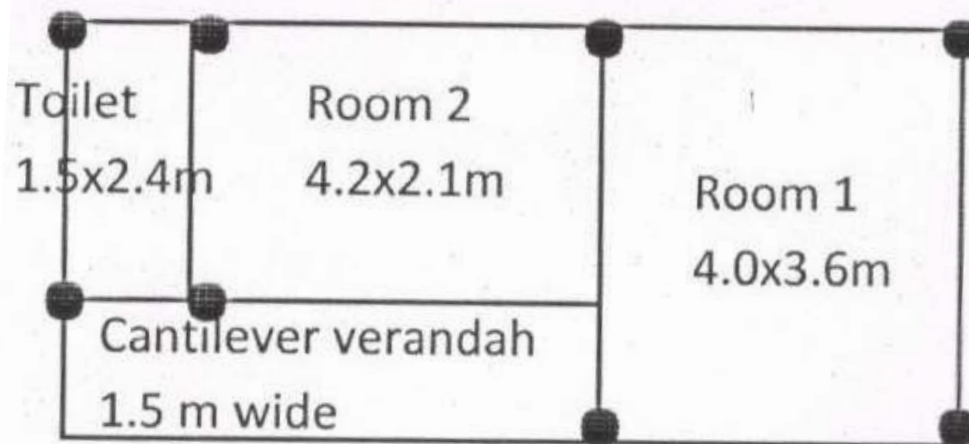
Drawing requirements:

1)	Key – plan, elevation and section	07
2)	Detail plan and detail cross – section with reinforcement of continuous slab	11
3)	Reinforcement anchoring details at column – beam and slab	12
4)	Reinforcement details of cantilever slab through shorter side	05

Q.3 Draw neat and proportionate sketches of the following mention suitable data and measurements wherever required   35

1) Portal Frame & reinforcement (300 x 600mm c/s, 5m height.)
2) Dog – Legged staircase reinforcement (1.0m wide to reach up to 3m ht)
3) Concrete lintels (230x300mm size for 1.35m opening at 2.1m ht)
4) RCC chajja (0.6m cantilever provided for 1.2m wide window)
5) RCC pergola (cantilever, 3.0mx3.0m size, supported by one beam at 2.4m ht beam size 230X230mm)

Section –B

Q.4 Describe the uses and properties of copper in building construction   10

Q.5 Write short note on –   10
1) Non ferrous metals
2) CBRI

Q.6 Write a short note on properties and uses of Aluminum   10

Q.7 What are the types of iron ? describe in brief   10

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SUBJECT CODE NO: E-709
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch. Examination Nov/Dec 2017
T.D.S.III
(Revised)

[Time: 3.Hours]   [Max.Marks:100]

Please check whether you have got the right question paper.

N.B
    i.   Question No.1 is compulsory . Answer any two from section A & three from section B
   ii.   Assume suitable data if necessary
  iii.   Figures to right indicate the maximum marks
  iv.   Use of non-programmable calculator is allowed
   v.   Use of I.S – 456 – 2000 is permitted

Section - A

Q.1   a) Explain importance of strength of structural member in comparison with its aesthetic appearance?   06

       b) Explain singly reinforced beam and doubly reinforced beam with neat sketches?   05

       c) What is flanged beam , how they are economical?   06

Q.2   Calculate area of reinforcement required for singly reinforced concrete beam 230mm wide and 450mm deep is to resist an ultimate moment of 100KN-M Assume Grade M- 20 concrete and Fe-500 steel and effective cover is 35mm.   16

Q.3   Design simply supported one way slab provided over an Industrial building passage of clear span 3.0Mtr. is to carry. The width of the support is 300 mm . Assume M-20 concrete and Fe-500   16

Q.4   Write short note on the following
      1) Limit sate collapse   05
      2) Design philosophy of structural design   05
      3) Explain under reinforced, over reinforced and balanced section in details?   07

Section – B

Q.5   Write a short note on the following (any four)   16
      a) What is long column & short Column?
      b) Types of stair case with sketch
      c) Effective length of column for different end conditions
      d) Type of slabs
      e) Draw Sketch showing reinforcement details of stair waist slab

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Q.6   Design a short R.C.C. Circular helically reinforced column to carry an ultimate load of 1500KN,   16
       both ends of the column are fixed having length 3.0m use Grade M-25 concrete and Fe- 415 steel.

Q.7   Design a R.C. Slab for a room size 4.0m   17
        X 5.0m the slab is simply supported on four sides. The slab continuous over left side and down
       ward side in plan, it carries live of $3KN/M^2$, floor finish load of $1KN/M^2$. Use Grade M-20
       concrete and Fe- 415 steel

Q.8   Enlist the steps involve for the design of RCC Footing ? Also draw neat sketch showing its details   17
       including reinforcement?

2017

SUBJECT CODE NO: E-714
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch Examination Nov/Dec 2017
H.A.III
(Revised)

[Time: Three Hours]   [Max.Marks:100]

Please check whether you have got the right question paper.

N.B
    i.   Answer to the two sections must be written on same answer book.
    ii.   Q.1 from section A and Q.5 from section B are compulsory.
    iii.   Attempt any two questions out of the remaining of each section.

Section A

Q.1 Write short note with neat sketches (any four)   24
    a) Columns and piers of cathedral
    b) Pinnacles
    c) Campanile of Churches
    d) Triforium gallery
    e) S. Nicola, Bari
    f) Buttress Wall

Q.2 Compare the planning and elevational features of Romansque and Gothic styles.   13

Q.3 Discuss the salient features of "Pisa group of Building" of Romansque Style.   13

Q.4 Describe the evolution and development of Gothis style in France.   13

Section B

Q.5 Write short note with neat sketches (Any four)   24
    a) Renaissance Domes
    b) Tudor Period
    c) Palladio
    d) Baroque
    e) Chapter house
    f) Mansions

Q.6 Give a detail note on early Renaissance, high Renaissance, Baroque and Rococo.   13

Q.7 Discuss the salient features of St. Peters Cathedral, Rome.   13

Q.8 Give a detail note on Renaissance in France by giving suitable examples.   13

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SUBJECT CODE NO:- E-718
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch Examination Nov/Dec 2017
E.S.S.-II
(Revised)

[Time: Three Hours]   [Max.Marks:100]

Please check whether you have got the right question paper.

N.B   i) Q.No.1 and Q.No.5 are compulsory.
            ii) Solve any two questions from remaining from each section.
            iii) Draw neat sketches to support your answer.

SECTION A

Q.1   Define the term sound insulation & describe the methods to be adopted for sound insulation   20
       under the following cases:-
       i)   When the source of noise is in the roof.
       ii)   When the source of noise is air-born
       iii)   When the source of noise is structure born

Q.2   Write Short notes on (any three)   15

       a)   Sound foci & dead spots.

       b)   Absorption coefficient.

       c)   Reflection of sound

       d)   Indoor & outdoor noise.

Q.3   Explain with neat sketches (any two)   15

       a)   Cavity resonator

       b)   Double wall Construction.

       c)   Effect of temperature on Sound.

Q.4   What is Reverberation? How is R.T. Calculated? Mention the R.T. for a Fairly Good acoustics.   15

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SECTION – B

Q.5   Explain with sketch the defects due to reflection of the sound waves in an enclosed Space.   20

Q.6   Write short notes (<u>any three</u>)   15

       a)   Echo & Reverberation.

       b)   Edge effect

       c)   Sound reinforcement

       d)   Sabine's equation for Calculation of R.T.

Q.7   Explain with neat sketches (<u>Any Two)</u>   15

       a)   Suspended ceiling

       b)   Sound shadow

       c)   Sound distribution in a room.

Q.8   Explain the Points which are considered while designing an O.A.T   15

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SUBJECT CODE NO: E-723
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch Examination Nov/Dec 2017
A.B.C.M.-III
(Revised)

[Time:4 hours] **[Max.Marks:100]**

Please check whether you have got the right question paper.

N.B
1) Solve any **two** questions from section A and any **three** questions from section B
2) Use drawing sheets for section A and answer sheet for section B
3) Assume suitable data wherever required
4) Use sketches wherever necessary

Section A

Q.1 Design an open well type of staircase for an institutional building 35
   i) Floor to floor height – 3.60 mts
   ii) Plinth Height – 1.20 mts
   iii) Width of flight and landing – 1.50mts

   Drawing requirements
   i) Detailed plan
   ii) Detailed sections
   iii) All important constructional details
   Use suitable scale

Q.2 Design suitable type of timber floor for a first floor hall from the following data 35
   i) Size of hall – 4.2 X 6.20 mts
   ii) All walls – 350 mm thk. Brick wall
   iii) Floor to ceiling height – 3.20mts

   Drawing requirment
   i) Detailed plan
   ii) Detailed two sections along both the span
   iii) All important constructional and joinery details
   Use suitable scale

Q.3 Draw neat sketches (any four) 35
   a) Types of Geometrical staircases
   b) Types of strutting used in timber flooring
   c) Fixing of baluster to concrete tread
   d) Types of joints used for floor boards
   e) RCC detail for folded steps
   f) Fixing of light fixtures in false ceiling
   g) Timber stairs closed string
   Use suitable scale

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Section B

Q.4 Write short note on (any two)   10
    a) Industrial forms of timber
    b) Emulsion paint
    c) Spirit varnish

Q.5 Explain importance of glass as building material in today's context   10

Q.6 Explain different types of polymer and their uses and properties   10

Q.7 Enumerate. "The different types of paints".   10

2017

Total No. of Printed Pages:2

[Time: Three Hours]   [Max.Marks:100]
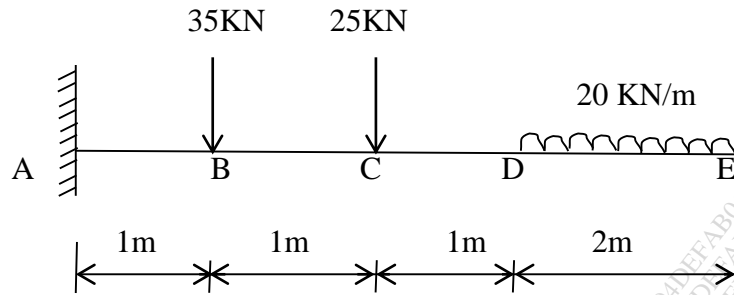
Please check whether you have got the right question paper.

N.B
    i.   Solve <u>any five</u> questions.
    ii.   Assume suitable data if necessary.
    iii. Figures to right indicate the maximum marks.
    iv. Use of non-programmable calculator is allowed.

Q.1   a) State the assumptions made in Euler's theory.   08

        b) Find Euler's critical load for the hollow cylindrical cast iron column 200 mm External   12
            diameter & 25 mm thick, if it is 5.0 Mt. Long & fixed at both end. Take $E = 8 \times 10^4 N/MM^2$

Q.2   A beam ABCD is simply supported at A & C. $AB = 5m, BC = 3m, CD = 2m$. It carries UDL of 20   20
     KN/M portion AB and a point load of 50 KN at B. Overhang portion CD carries UDL of 20 KN/M.
     Use Macaulay's method and prepare the equations for slope and deflection. Find the slope at B and
     deflection at D. Take $EI = 4000 \, KN - M^2$

Q.3   Draw shear force and bending moment diagram for the beam as shown below.   20

Q.4   A uniform –T section beam is 100 mm wide by 150 mm deep with 25 mm thickness of flange and   20
     web. If the limiting bending stress for the material of the beam are 80MN/M^2 in Compression and
     160MN/M^2 in tension. Find the maximum UDL that the beam can carry over a simply supported Beam
     of span 5 M.

Q.5   a) What are the limitations of Euler's Theory?   07
        b) Write short note on Flitched Beam. Draw neat sketches.   07
        c) Write a note on statically indeterminate structure.   06

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Q.6   Draw shear force and bending moment diagram for the cantilever beam as shown below.   20

35KN   25KN

20 KN/m

A   B   C   D   E

1m   1m   1m   2m

Total No. of Printed Pages:1

SUBJECT CODE NO:- E-731
FACULTY OF ENGINEERING AND TECHNOLOGY
S. Y. Arch Examination Nov/Dec 2017
H.A.-II
(Revised)

[Time: Three hours]   [Max.Marks:100]

Please check whether you have got the right question paper.

N.B   (1) Answer to the two sections must be written on same answer book.
             (2) Q. No.1 from Section A and Q. No.5 from Section B are compulsory.
             (3) Attempt any two questions out of the remaining of each section.

Section A

Q.1   Write short note along with sketches (any four)   24
      (a) Siddi Saiyyed Screen
      (b) Cupolas
      (c) Tughlaq Domes
      (d) Jami Masjid Bijapur
      (e) Hindola Mahal, Mandu
      (f) Cloister and courtyard

Q.2   Discuss the contribution of slave dynasty rulers, with suitable examples.   13

Q.3   With neat sketches show characteristic features of Bijapur provincial style   13

Q.4   Show how the dome was constructed on square base, supported by sketches   13

Section – B

Q.5   Write short note along with sketches (any four)   24
      (a) Chhatris on terraces
      (b) Art on wall surfaces
      (c) Moti Mahal, Agra Fort
      (d) Jami Masjid, Combay
      (e) Diwan-i-khas, Fatehpur Fort
      (f) Buland Darwaza.

Q.6   Discuss the layout scheme at Red Fort Delhi.   13

Q.7   Give a detail note on "Forts of Akbar reign".   13

Q.8   Elaborate the layout scheme and aesthetical qualities of Humayun Tomb   13

2017

SUBJECT CODE NO: E-738
FACULTY OF ENGINEERING AND TECHNOLOGY
S.Y. Arch Examination Nov/Dec 2017
A.D.III
(Revised)

[Time: Day-1 = 6 Hrs Enlodge Day-2 = 3 + 3 Hrs.]   [Max.Marks:100]

Please check whether you have got the right question paper.

N.B   A) The candidates are instructed to submit line plans, site plan at the end of the first day. No major deviations will be allowed in the final design from the design submitted at the end of the 1st day sketch should be written in bold letters.

B) The candidates are further instructed to submit the final design in the form of a portfolio binding all the drawings including sketches, tracings, and 1st Day sketches together and covering the portfolio with white sheets on both sides. The candidates shall write their examination number on the top right hand corner of the cover sheet. All the drawings in the portfolio shall carry the examination number of the candidate.

C) The candidates are instructed to see that all the drawings in the portfolio are signed by the invigilator.

D) Your design paper will be assessed as a whole.

E) Assume suitable data wherever possible and mention it clearly.

Topic : CORPORATE GUEST HOUSE

A corporate guest house is to be designed at the rapidly developing Shendra DMIC at Aurangabad. Looking at the pace and magnitude of this industrial development the guest house needs to cater the art of state requirements of a world class corporate guest house.

REQUIREMENTS:

The project is divided in 4 zones:
   1. Professional zone

   a. Entrance foyer - @ 15 to 20 sq mts.
   b. Great room – for 30 persons – 60 sq mts.
   c. Study room with small library and internet connectivity - @ 25 sq mts.
   d. Seminar hall/ Training hall/ workshop – (with an outdoor or sime covered space) 50 persons. - @ 100 to 120 sq mts.
   e. Conference room / meeting area – 30 persons. - @ 50 sq mts.
   f. Dining area – 50 persons @ 75 to 80 sq mts.
   g. Kitchen - @ 25 sq mts.
   h. Pantry, store room Cold storage - @ 10 to 15 sq mts.
   i. Adequate toilet facility.

2. **Accommodation zone**

    a.   Executive suits – 2 nos @ 30 to 40 sq mts.
    b.   Deluxe Rooms – 4 nos. @ 25 to 30 sq mts.
    c.   Standard Rooms – 9 nos. @ 20 sq mts.
    d.   Service station – 2 nos. - @ 10 to 15 sq mts each.
    e.   Linen store - @ 10 to 15 sq mts.

3. **Recreational zone:**

    a. Indoor recreational area - @ 75 to 80 sq mts.
    b. Swimming pool
    c. Landscape/ Jogging track etc.
    d. Party lawns – 100 persons.

4. **Administrative zone**

    a. Administrative 5 staff members. Cubical.
    b. Manager's cabin – 1 no - @ 10 to 15 sq mts.
    c. Staff retiring with, lockers, - 30 sq mts.
    d. Adequate toilet facility
    e. Driver's room
    f. Security cabin

5. **Parking facility**

    a. Garage for 2 buses
    b. 5- Four wheelers
    c. 20 – Two wheelers.

Drawings Requirements: (Use Suitable Scale)

    a) Conceptual drawing
    b) Site plan
    c) Floor Plan (all bldg. blocks on site)
    d) Sections and Elevation (minimum two each)
    e) Site section
    f) Landscaping detail
    g) Perspective view of whole site

The Site:110.00 mts × 80.00mts

OFFICES

110.00

80.00

15 MTS WIDE ROAD

OFFICES

NORTH

MAIN ROAD 24 MTS WIDE

CORPORATE GUEST HOUSE

2017

SUBJECT CODE NO: E-735
FACULTY OF ENGINEERING AND TECHNOLOGY
S.Y. Arch Examination Nov/Dec 2017
E.S.S.-I
(Revised)

[Time: 3 Hours]   [Max.Marks:100]

Please check whether you have got the right question paper.

N.B
1) Q. No. 1& Q. No. 5 are compulsory and solve any two questions from remaining from both sections.
2) Draw neat sketches to support your answer.

Section A

Q.1   Explain with proper sketches the sources of water, how the quality of water is tested &   20
Treatment plant with its stages.

Q.2   Explain with neat sketches [any three]   15

     i)   Any two types of water distribution system
     ii)   Bib tap
     iii)   Domestic hot water supply system.
     iv)   Amount of daily water requirement as per occupancy.

Q.3   Explain with neat sketches the need & importance of rain water harvesting system.   15

Q.4   Explain the importance of solar water heating system in today's context.   15

Section B

Q.5   Write the basic principles of sanitation and the disposal of waste from buildings.   20

Q.6   Explain with neat sketches [any three]   15

     i)   Ventilation of drainage system & it's importance.
     ii)   One pipe & two pipe system of sanitation.
     iii)   Inspection chamber.
     iv)   Intercepting chamber.

Q.7   Explain in detail the stages of sewage treatment process.   15

Q.8   Explain the working of "Septic Tank" with the help of neat detailed sketch.   15

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