Q.1. Define the terms (any four):
   a) Marquetry.
   b) Inlay.
   c) Rosette.
   d) Gilding.
   e) Stucco work.
   f) Mosaic.

   **PART-A**

   Q.2 “Straight line and heavy embellishment were the two main features of Egyptian furniture”. Describe other characteristics and furniture styles of this era with neat furniture sketches.  

   Q.3 Differentiate between any two ancient civilizations with suitable examples.  

   Q.4 Discuss about Roman civilization and culture along with a furniture sketch depicting the identifying characteristics.  

   **PART-B**

   Q.5 Identical characteristics and features were added in the furniture by William & Mary. Discuss in detail the salient features of this time with suitable examples.  

   Q.6 Discuss salient features of Renaissance furniture with suitable examples.  

   Q.7 Restoration is considered as one of the most important period of furniture making. Briefly discuss the furniture making with key features, motifs, material etc along with neat furniture sketches.
Q.1 Write short notes on any two of the following:
   a) Internet etiquette.
   b) Assertiveness.
   c) Active listening.
   d) Formats of writing.

   PART-A

Q.2 List the key aspects that one should keep in mind while making an effective presentation. Give a detailed explanation of each.

Q.3 Write a paragraph on any one of the following:
   a) Importance of interior designing.
   b) NASA-2016 at Manav Rachna University

Q.4 What do you understand by the term ‘conflict’? State the possible causes of a conflict at workplace. Also state various ways to resolve them.

   PART-B

Q.5 Write an email to the procurement head of your company for the release of the following articles to resume the ongoing project:
   a) 10 Sets of green American double roll wall paper.
   b) LED Bulbs - 70 units.
   c) White Paint - 20 Ltrs.

Q.6 Write the summary of the following article:

   Historians remain divided over the role of banks in facilitating economic growth in the United States in the late eighteenth and early nineteenth centuries. Some scholars contend that banks played a minor role in the nation’s growing economy. Financial institutions, they argue, appeared only after the economy had begun to develop, and once organized, followed conservative lending practices, providing established commercial enterprises but shunning those, such as manufacturing and transportation projects, that were more uncertain and capital-intensive (i.e. requiring greater expenditures in the form of capital than in labor). A growing number of historians argue, in contrast, that banks were crucial in transforming the early national economy. When state legislatures, began granting more bank charters in the 1790s and early 1800, the supply of credit rose accordingly. Unlike the earliest banks, which had primarily provided short-term loans to well-connected merchants, the banks of the early nineteenth century issued credit widely. As Paul Gilje asserts, the expansion and democratization of credit in the early nineteenth century became the driving force of the American economy, as banks began furnishing large amounts of capital to transportation and industrial enterprises. The exception, such historians argue, was in the South; here, the overwhelmingly agrarian nature of the economy generated outright opposition to banks, which were seen as monopolistic institutions.
controlled by an elite group of planters.

Q.7 List four communication styles and briefly explain each one of them in brief.
B. Sc. (Interior Design) - First Semester  
MATERIALS AND FINISHES-I (351-108)

Time: 3 hrs.  
Max Marks: 40  
No. of pages: 1

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory.** Attempt any **TWO** questions from **PART-A** and **TWO** questions from **PART-B**. Each question carries equal marks.

Q.1 What is the difference between air drying and kilm drying? Explain with examples. 8

PART-A

Q.2 Calculate the wallpaper required to cover a room of 12’×15’ with 9’-8” height minus 4” skirting and 3’×7’ 2doors and 6’×4’ one windows. 8

Q.3 Please explain Italian leather. What is taming process? Discuss. 8

Q.4 Define ‘paint’. What kind of finishes are available in paints? 8

PART-B

Q.5 Define and explain various types of carpet floorings in detail. 8

Q.6 Distinguish between ferrous and non-ferrous metals. Explain their applicability in detail. 8

Q.7 What kind of green / sustainable / eco finishes are available in market? Elaborate them in detail. 8
B. Sc. (Interior Design)-Second Semester
HISTORY OF FURNITURE-II (351.205)

Time: 3 hrs
Max Marks. 40
No. of pages: 1

Note: Attempt any FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part - A and TWO questions from Part - B. All questions carry equal marks.

Q.1 Discuss similarities and differences of various furniture styles which can be used in an interior space to make it look more creative. Support your answer with suitable examples.

PART-A

Q.2 Critically compare any two styles of furniture making with suitable illustrations.

Q.3 Georgian period plays an important role in the history of furniture. Justify the statement with suitable furniture sketches.

Q.4 Discuss about the work of any two given designers:
   a) Chippendale.
   b) Heppelwhite.
   c) Sheraton.

PART-B

Q.5 ‘Change in furniture construction technique lead to major changes in history of furniture’. Justify the statement with examples.

Q.6 Write a short note on ‘Art Nuevo’.

Q.7 ‘Recycled furniture can be used in an interior for many reasons’. Discuss its uses in current scenario.
B. Sc. (Interior Design) -Second Semester  
COMMUNICATION - II (351.207)

Time: 3 hrs  
Max Marks:  40  
No. of pages: 1

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory**. Attempt any **TWO** questions from **Part A** and **TWO** questions from **Part B**. Each questions carry equal marks.

Q.1  Briefly explain **any four** of the following:

a) Opening strategies for a presentation.  
b) Business proposal.  
c) Importance of punctuation.  
d) Audience analysis for presentation.  
e) Letter of engagement.  
f) Client dealing.  

**PART A**

Q.2  Write a paragraph on **any two** of the following topics:

a) “Interior design as a the new dream career for the creative youth”.  
b) “Career as a freelancer interior designer”.  
c) “A good presentation to the client is half the battle won”.  

Q.3  Prepare an outline of presentation on **any one** of the following topics:

a) “Life of an interior design student”.  
b) “Celebrity interior designers of India”.  

**Instructions:**

a) Prepare at least 10 slides (draw boxes on sheet).  
b) Include introduction, body and conclusion.  
c) Use pointers.  
d) Display clarity of thoughts.  
e) Organize content logically.  

Q.4  You are the design head of XYZ Design Company and you have received a request from in the Himachal Pradesh State Government to refurnish one of their guest houses used by High Class Government Officials. They have asked you to e-mail them a brief idea about what you’re going to do and have requested a fee quote (apart from the cost of products/ material/ items that will be used). Write an e-mail giving information of the same and include a request for a brief meeting.

**PART B**

Q.5  Explain the process of procuring raw material a for a design project.  

Q.6  Explain the major components of a business proposal in detail.  

Q.7  You are the manager of an Interior Designing Firm which has decided to send an in-house designer to represent the Firm at an international interior design conference. You have decided to hold a competition for interested employees to present their ideas on “Why should I be chosen to represent the Firm at the conference”. Write a memo informing the staff about it, giving details about the meeting where the presentations will be delivered; and the date on which the result will be announced.
MATERIALS AND FINISHES-II (351-209)

Q.1 What are woven fabrics? What are different types of weaves? Elucidate the variations with neat sketches.

PART-A

Q.2 Choose appropriate textile for a bedroom interior 12’×15’×10’. Justify your interior concept approach.

Q.3 Differentiate between ‘natural’ and ‘synthetic fabrics’. What are these environmental concerns?

Q.4 Explain natural and artificial fabrics in detail.

PART-B

Q.5 Calculate the length used to make curtains for the following window size 8’6”×10’. Fill level is 1’-6”.

Q.6 Combine a fabric with artificial leatherette. Illustrate a design supporting with diagram.

Q.7 Choose a textile for background of an office reception. Write a concept complementing Table, Chair and Artefacts.
B.Sc. (Interior Design) – Second Semester
GENERAL EDUCATION (351-210)

Time: 3 hrs.                                          Max Marks: 40

No. of pages: 1                                         No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 What is a debate? What are “the do’s and don’ts of a debate? 8

PART-A

Q.2 What is the importance of history? How can one become a better listener? 8
Q.3 What are the 6 Ps of service marketing? Explain each in 2-3 lines. 8
Q.4 Why are group discussion important? 8

PART-B

Q.5 What is marketing communication? What are the various types of marketing research? 8
Q.6 What are the different barriers in effective communication? What is difference between verbal and written communication? 8
Q.7 Let’s say you have been asked to appear for an interview. How you are going to answer the following questions:
   a) Where do you see yourself after 3 years from now?
   b) Why should we hire you? 4×2
B.Sc. (Interior Design)-Second Semester
WINDOW TREATMENTS AND SOFT FURNISHINGS (351.211)

Time: 3 hrs
Max Marks. 40
No. of pages: 1

Note: Attempt any FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part - A and TWO questions from Part - B. Each question carries equal marks.

Q.1 Write short notes on (any four):
   a) Hard treatment.
   b) Cornice.
   c) Drapery.
   d) Curtain.
   e) Molding.
   f) Valance.

   PART-A

Q.2 ‘Treating a window is the most important part in interior design’. Discuss in detail the importance of treating a window with suitable examples. 8

Q.3 Discuss in detail various types of window treatments with the help of a flow chart along with suitable pictorial representation. 8

Q.4 How can different period styles of window treatment be coordinated with interior design? Give suitable examples. 8

   PART-B

Q.5 ‘Soft furnishing can do wonders in a boring interior’ justify the given statement including various parts of soft furnishing with suitable examples. 8

Q.6 Define ‘re-upholstery’. Discuss in detail advantages and disadvantages of the same. 8

Q.7 Beddings plays the most important role as they are associated with comfort. Suggest appropriate materials and consideration to be kept in mind while selecting the same. 8
B.Sc. (Interior Design) – Fourth Semester
BUSINESS SKILLS FOR DECORATORS (351.401)

Time: 3 hrs. Max Marks: 40
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Explain any four in brief:
   a) Trade sources.
   b) Proposed contract.
   c) Basic managerial role.
   d) Interior design.
   e) Wholesale price. 2×4

PART-A
Q.2 Explain the various phases involved in managing Interior Designing projects. Also discuss the importance of Interior Designer being updated with current market scenario. 8
Q.3 Discuss in detail the designer’s code of ethics. 8
Q.4 Why is working portfolio required for Interior Designers? Prepare an outline of a portfolio. 8

PART-B
Q.5 Explain the different methods used by an Interior Designer to charge the client. Also discuss the advantages and disadvantages of various methods used. 8
Q.6 Explain any two of the following:
   a) Agreement and contract.
   b) Supplier and resources available for decorating trade.
   c) Trade shows. 4×2
Q.7 Discuss the importance of cover letter and resume. What is the difference between the two? Write a sample resume highlighting the capabilities. 8
B. Sc. (Interior Design)- Fifth Semester
ESTIMATION AND PROFESSIONAL PRACTICE (351.501)

Time: 3 hrs  Max Marks: 40
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. All questions carry equal marks.

Q.1 Explain briefly any four of the following:
   a) Letter of Agreement and Termination by an agreement.
   b) Interior Design Competitions/Contests.
   c) Fee of an interior designer.
   d) Basic elements of a contract.
   e) Explain importance of correspondence and record keeping in the interior design profession. 2x4

PART-A

Q.2 Discuss the responsibility of an interior designer in detail. 8
Q.3 Discuss the challenges which the profession of interior designer is facing at present. 8
Q.4 What is the role of an interior designer towards the execution of a project? 8

PART-B

Q.5 Discuss the ethics and professional conduct of an interior designer. 8
Q.6 Differentiate between ‘self-development’ and ‘self-promotion’ in interior designer profession. 8
Q.7 Discuss options other than employment and private practice on completion of education in interior design. 8
Q.1 What are the types of estimates? 8

**PART-A**

Q.2 What is the procedure for estimating the cost of a small office (around 300 sq.ft.) interior design of furniture only? 8

Q.3 Write specifications for the furniture of the office mentioned in question no. 2. 8

Q.4 Calculate material and labor estimate for a 4’×8’ table with 3”×3” wooden piers and 25 mm board on top. 8

**PART-B**

Q.5 What types of inputs are required in a detailed estimate? Elaborate each in 2-3 lines. 8

Q.6 What is the difference between a preliminary and detailed estimate? Elaborate with a diagram. 8

Q.7 What is the difference between BOQ and AOC? Illustrate with tables. 8
Bachelor of Science (Interior Design) Sixth Semester
MATERIAL FINISHES AND DESIGN TRENDS (351.610)

Time: 3 hrs
Max Marks. 40

Note: Attempt any FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part - A and TWO questions from Part - B. Each question carries equal marks.

Q.1 A two month “world cultural festival is being held at Hotel Lalit, Delhi. For this occasion a few specialty restaurants are being designed which would be a part of the hotel later also. You have been hired to prepare a design concept for one of these from the following options:
   a) European cuisine.
   b) Asian cuisine.
   c) African cuisine.
   Based on the above, give a detailed write-up supported with sketches suggesting a concept for one of the restaurants.

PART-A

Q.2 Define ‘fabric’ and its types in detail

Q.3 “Color is a very important aspect in an interior specification”. Discuss in detail.

Q.4 Sketch at least two furniture pieces in contemporary design for the living area of a residence.

PART-B

Q.5 List a few materials you want to use in a partition design for the reception and waiting area of an advertising agency office. The budget is not too high but at the same time it has to give a trendy look. Support your answer with a neat sketch.

Q.6 Today the global climate change has become a key issue. As an interior designer what would be your contribution to save the planet?

Q.7 Design a sculpture using scrap materials near the parking lot corner opposite the E- Block of your college. Specify the area and height also.
Q.1 Write short notes on the following:
a) Importance of graphs in audio visual presentation.
b) Breach of contract.
c) Informative reports.
d) Letter of agreement.
e) Professional conduct.  

PART A

Q.2 What do you understand by professional ethics? What is the importance of these? Explain in detail.  

Q.3 a) What is the importance of social media and how can it be used to market the work of a designer?  
b) What is the need of presentation drawing in an interior design project?  

Q.4 What is the difference between an agreement and a contract? Explain the various elements of a contract in detail.  

Q.5 Discuss the need of an interior designer. Explain various methods by which an interior designer can charge their fees for a design project.
Q.1. Write short notes on the following:
  a) Golden proportion.
  b) Emphasis.
  c) Harmony.
  d) Balance.
(Please use sketches to make your answers self-explanatory) 2x4

PART-A

Q.2 Draw a pattern only of the following themes in a circle of 10 cm diameter:
  a) Greek.
  b) Roman. 4x2

Q.3 Draw any one of the following textures:
  a) Crushed paper.
  b) Water droplets. 4x2

Q.4 Explain the process of formation of a volume froma point. 8

PART-B

Q.4 Complete the following design matrix with compositions:

<table>
<thead>
<tr>
<th>Principles of Design</th>
<th>Balance</th>
<th>Emphasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elements of Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q.6 Make logo on of the following topics keeping golden proportion in mind:
Bakery shop – it’s a shop or bakery that sells only sweets and desserts somewhere in New Delhi. You have to make a logo for the same. 8

Q.7 Make a composition using curved lines and three primary colors in a rectangle of A-4 size. 8
Q.1 What do you understand by lighting? What are the different sources of light, its advantages and disadvantages? Give examples of utilizing day lighting in interior designing.

Q.2 What is the difference between direct lighting, indirect lighting and diffused lighting? Explain it with proper sketches.

Q.3 Briefly explain the principles of various methods of light distribution and dispersion with neat sketches.

Q.4 Define the terms with sketches (any four):
   a) Lux.
   b) Luminous flux.
   c) Spotlight.
   d) Direct and indirect lighting.
   e) Recessed Light.

Q.5 Discuss in detail various levels of lighting with respect to ‘ambient lighting’, ‘accent lighting’ and ‘task lighting’ along with suitable sketches.

Q.6 Explain the effects of color with different types of lighting with respect to the lighting layout of a commercial space.

Q.7 Explain the different ‘ighting symbols’ used in interior designing. Make the lighting layout of a residential unit showing the use of various symbols.
B.Sc. (Interior Design) - Third Semester  
LIVING GREEN (351-309)

Time: 3 hrs. 
Max Marks: 40 
No. of pages: 1

Note: Attempt **FIVE** questions in all; Q.1 is compulsory. Attempt any **TWO** questions from Part A and **TWO** questions from Part B. Each question carries equal marks.

Q.1 What do you understand by sustainable interior designing? How would you practice living green in your day to day life?  

**PART-A**

Q.2 What is environmental degradation? Give examples. Explain the manmade reasons behind the environmental stressors.  

Q.3 What are the ways to promote green sustainable designing of a residence? Explain it with an example of LEED residence. Make proper sketches to support the answer.  

Q.4 Explain the cycle of Ruse, Reduce and Recycle. How can recycled building materials promote sustainability?  

**PART-B**

Q.5 What is sustainable transportation? Explain the ways to promote sustainable and effective transportation with two examples.  

Q.6 What are the ways to promote water management, energy efficient lighting and indoor air quality in a commercial space?  

Q.7 List down various green building materials used in interior designing. Give proper explanation for each of them. Make a proposal to use all the materials in the designing of a cafeteria.
Time: 3 hrs.  
Max Marks: 40  
No. of pages: 1

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory.** Attempt any **TWO** questions from **PART-A** and **TWO** questions from **PART-B.** Each question carries equal marks.

Q.1 Write short notes on:  
   a) Color sensation.  
   b) Additive color mixing method.  
   c) Difference between value and intensity of a color.  
   d) Color symbolism.  

   **PART-A**

Q.2 Draw color wheel and explain how all colors can be created by using the three primary colors.  

Q.3 Describe the research done on the psychology of color as studied by any two color theorist.  

Q.4 Based on your knowledge of the psychological effect color has on people, what colors (warm, cool or neutral) would you see in each of the following spaces and justify why?  
   a) Children’s bedroom.  
   b) Hospital.  
   c) A small bedroom for older adults.  
   d) Restaurant.  

   **PART-B**

Q.5 What factors influence the way color schemes are used in planning an interior design?  

Q.6 Discuss various components to determine sustainability of paint products.  

Q.7 Discuss the factor that leads color to have a psychological impact on people.
Time: 3 hrs

Max Marks. 70

Note: Attempt FIVE questions in all. PART-A is compulsory. Attempt any FOUR questions from Part - B. Each questions carry equal marks.

PART-A

Q.1. Attempt any seven questions of the following:
   a) Name different types of loads.
   b) Explain parallelogram law of force.
   c) What are the assumptions used in analysis of truss?
   d) Define ‘centroid’.
   e) Write the formula for movement of inertia of a rectangular section bxdo the axis passing through base of the rectangle.
   f) State law of transmissibility of forces.
   g) What are the different types of supports?
   h) Define ‘equilibrant’.
   i) State Parallel Axis theorem.
   j) Draw any four types of truss.

PART-B

Q.2 a) Explain Newton’s Laws of motion.
   b) Find the resultant of the force system shown below:

   ![Force Diagram](image)

Q.3 Find out the reactions at the support for the given beam:
   a) ![Beam Diagram](image)
   b) ![Beam Diagram](image)
Q.4  
**a)** Find the C.G. of the figure given below:

![T-shaped figure with dimensions](image)

**b)** Find the moment of inertia of an I-section with flanges as 150mm x 50mm and web as 50mm x 150mm about X-X axis through the centre of gravity of section.

Q.5  
**a)** Explain in brief different types of force systems.

**b)** State Lami’s theorem and calculate the value of tension in the string as shown in the figure using the same.

![Triangle with forces](image)

Q.6  
**a)** Explain method of section of solving truss.

**b)** Find forces in all the members of the truss shown below:

![Triangular truss with forces](image)
Bachelor of Architecture - First Semester  
COMMUNICATION SKILLS (AR-109)

Time: 3 hrs  
Max Marks. 70  
No. of pages: 1  

Note: Attempt FOUR questions in all. PART-A is compulsory. Attempt any THREE questions from PART-B.

**PART-A**

Q.1. a) Write the correct tense of the verb to complete the sentences:
   i) He has to reach his office _______ 10 O’clock.
   ii) His son is _____________ England.
   iii) The country seems to be moving ___________ chaos.
   iv) He was absorbed __________ deep thoughts.
   v) Could you meet me__________ 2.30 pm.
   vi) He is leaving ___________ Delhi by shatabdi express.
   vii) Now-a-days his daughter is ___________ America.

   b) Fill in the blanks using ‘since’ or ‘for’ whichever is appropriate:
   i) He hasn’t been here ____________ three weeks.
   ii) I haven’t driven a car ________ my youth.
   iii) ____________ last year the streets have become more crowded.

**PART-B**

Q.2 Read the following paragraph and answer the questions:

The population of India is increasing at a very fast rate. This sudden increase is very alarming and is called ‘population explosion’. No doubt we have made great progress in almost all fields of industry, agriculture and trade but still we are unable to eliminate poverty due to multiplication of human population. The progress made in the field of medical science has decreased the death rate. The fear of diseases, epidemics and untimely death are fast disappearing and the average life of man has increased, it is good but for the progress of the nation we must control birth rate also. Steps should be taken to control the growth of the population. People should be educated about the methods of family planning and should be made aware of the advantages of small family. The most important task before the nation is to check the increase of the population to raise our standard of life:

   a) What is population explosion?
   b) Why should we control the birth rate?
   c) What should we educate to the people?
   d) What is the most important task before the nation?

Q.3 Write down different barriers in the path of effective communication and ways of overcoming them.  

20

Q.4 Write short notes on the following:
   a) My first day in college.
   b) Science and technology.
   c) Any cultural programme.
   d) The increasing use of internet.  

5x4
Q.5 Write an application for the post of junior architect with resume.
Bachelor of Architecture – Second Semester
STRUCTURAL DESIGN-II (AR-205)

Time: 3 hrs
Max Marks: 70
No. of pages: 2

Note: Attempt FIVE questions in all; PART-A is compulsory. Attempt any FOUR questions from PART-B. Each question carries equal marks.

PART-A

Q.1 Define the following:
   a) Elastic limit.
   b) Bending stress.
   c) Poisson’s ratio.
   d) Shear stress.
   e) Bending moment and shear force.
   f) Fixed end moment.
   g) Lateral strain.

PART-B

Q.2 a) A hollow steel tube 35 m long has external diameter of 150 mm. In order to determine the internal diameter the tube was subjected to a tensile load of 450 kN the extension was measured to be 3 mm. If the modulus of elasticity for tube material is 200 GPa, determine the internal diameter of the tube.

\[
\text{External diameter} = 150 \text{ mm}
\]

\[
\text{Internal diameter} = \text{External diameter} - 2t
\]

b) Write the expression for relation between:
   i) Bulk modules and young’s modules.
   ii) Bulk modules, young’s modules and shear modules.

Q.3 A compound bar ABC 1.5 m long is made up of two parts of aluminium and steel and the cross-sectional area of aluminium bar is twice that of steel bar. The rod is subjected to an axial load of 200 kN. If elongations of steel and aluminium parts are equal, find the length of two parts of aluminium and steel of the compound bar.
   \[\text{E}_{\text{steel}} = 200 \text{ GPa} \quad \text{E}_{\text{aluminium}} = 70 \text{ GPa}\]

Q.4 a) Draw shear force and bending moment diagram for the beam shown below:
b) Find the value of shear force and bending moment at a point 2m from left support for the beam shown below:

Q.5 A fixed beam AB of span ‘l’ carries a point load of WkN at a distance of ‘a’ from A. Determine the value of fixing moment of the beam shown below:

Q.6 A continuous beam ABC, 8m long rests on three supports A, B and C at the same level. Determine the moment over the beam and draw bending moment diagram using three moment theorem.
Q.1 What is sociology? How do you think it is related to architecture? 12

PART-A

Q.2 What is Territorial Organization of a space? What are the three types of Territorial spaces? 12

Q.3 What is the concept of culture and explains the following?
   a) Material culture.
   b) Non-Material culture. 6×2

Q.4 Explain Abraham Maslow's theory in psychology in detail. 12

PART-B

Q.5 Write an essay on “effects of psychology on the built environment”. 12

Q.6 Explain poverty and ghettoization in reference to slums. 12

Q.7 Write short notes on the following:
   a) Ethnocentrism.
   b) Theory of culture lags. 6×2
Bachelor of Architecture – Second Semester  
CLIMATOLOGY (AR-209)

Time: 3 hrs  
Max Marks. 70  
No. of pages: 1

Note: Attempt any FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part - A and TWO questions from Part - B. Each question carries equal marks.

Q.1. Write short notes on the following:  
a) Solar control.  
b) Shading devices.  
c) Roof pond.  
d) Evaporative cooling.  
e) Thermal storage walls.  
f) Sunspace.  

PART-A

Q.2 What is ventilation? Explain in detail with proper sketches.  
10

Q.3 Explain the relevance of climatology in architecture. Explain various types of climatic zones.  
10

Q.4 Define ‘passive environment control mechanism in traditional and modern built environment’.  
10

PART-B

Q.5 What is the importance of ventilation and air movement in building? Explain diagrammatically.  
10

Q.6 What are the major climatic zones in India? Explain the characteristics of a cold climatic zone (Cloudy and Sunny) in detail, along with climate design recommendations for designing shelters in such regions. Illustrate with sketches.  
10

Q.7 Differentiate between direct-gain, indirect-gain and isolated-gain in passive solar heating.  
10
Bachelor of Architecture and Planning–Third Semester
HISTORY OF ARCHITECTURE-I (AR-304)

Time: 3 hrs
Max Marks: 60
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Write short notes on the following:
a) Agora.
b) Doric order.
c) Confucianism.
d) Flying Buttresses.

PART-A

Q.2 Differentiate between ‘Agora’ and ‘Forum’ and mention the salient features of Greek and Roman town planning. 12

Q.3 Describe with sketches any one settlement pattern of Indus valley civilization, its salient features and what probably brought an end to it. 12

Q.4 What are the distinguishing architectural characteristics of Gothic architecture? Illustrate Notre Dame Cathedral with sketches. 12

PART-B

Q.5 Elaborate the major architectural features of Buddhist architecture rock-cut, Chaityas, and Viharas. Describe the architectural features of the Stupa of Sanchi in detail. 12

Q.6 Explain the evaluation of Mastaba in Ancient Egypt with neatly labeled sketches, highlighting the additions at each phase and the functional changes that took place over time. 12

Q.7 Elaborate the planning of city of Khorsabad. 12
Bachelor of Architecture – Third Semester  
STRUCTURE DESIGN-III (AR-305)

Time: 3 hrs  
Max Marks: 60  
No. of pages: 2

Note: Attempt FIVE questions in all; Part A is compulsory. Attempt any FOUR questions from Part B.

PART-A

Q.1  a) Defined bending stress and shear stress.  
      b) What do you understand by moment of resistance?  
      c) What do you understand by eccentric loading?  
      d) Differentiate between direct stress and bending stress.  
      e) Explain the term: “strength of a section”.  
      f) What is a neutral axis and sectional modulus?  

2×6

PART-B

Q.2  a) For a given stress, compare the moments of resistance of a beam of a square section when placed:  
      i) With its two sides horizontal  
      ii) With its diagonal horizontal  

b) A rectangular beam is to be cut from a circular log of wood of diameter D. Find the ratio of dimensions for the strongest section in bending.
Q.3  
a) A cantilever beam is rectangular in section having 80 mm width and 120 mm depth if the cantilever is subjected to a point load of 10 kN at the free end and bending stress is not to exceed 50 MPa, find the span of the cantilever. 

b) A timbers beam of rectangular section supports a load of 50 kN uniformly distributed over a span of 3.6 m. If the depth of the beam section is twice the width and maximum stress is not to exceed 10 MPa, find the dimension of the beam section.

Q.4  
If the maximum bending stress in the beam section is not to exceed 50 MPa, find the moment which the given beam can resist.

Q.5  
a) Show that for a rectangular section, distribution of shearing stress is parabolic and hence derive the expression.

b) A wooden beam 150 mm wide, 250 mm deep and 4 m long is carry a UDL of 50 kN/m. Determine the maximum shear stress and sketch the variation of shear stress along the depth of column.

Q.6  
a) What do you understand by the term ‘column and strut’. Distinguish clearly between long columns and short columns?

b) Explain the failure of long column and short column.

c) A steel rod 5 m long and 40 mm diameter is used as a column with one end fixed and other free. Determine crippling load by Euler’s formula. Take E=200 GPa.
Bachelor of Architecture- Third Semester  
SURVEYING AND LEVELING (AR-306)

Time: 3 hrs.  
Max Marks: 40  
Note: Attempt **FIVE** questions in all; **Q.1 is compulsory**. Attempt any **TWO** questions from **Part A** and **TWO** questions from **Part B**. Each question carries equal marks.

Q.1  
a) Define surveying.  
b) What is the use of spirit level?  
c) List any four equipments used in chain surveying.  
d) Enlist various components of GIS.  

2×4

**PART-A**

Q.2  
a) Discuss various applications of surveying.  
b) Describe the uses of following:  
    i) Ranging rods.  
    ii) Compass.  

2×2

Q.3  
a) Ans offset is laid at 4° out from its true direction in the field. Find the displacement of point on ground and on plan, if the offset measured was 8m and the scale of plotting was 6m to km for the following given cases:  
    i) In the direction, parallel to the chain line.  
    ii) In the direction, perpendicular to the chain line.  

4

b) How is surveying useful for architects?  

4

Q.4  
a) With the help of suitable sketches describe the procedure of direct and indirect ranging.  
b) What are the objectives of surveying?  

4

**PART-B**

Q.5  
a) Angular error in laying off the perpendicular direction of an offset was found to be 5°. What should be the accuracy with which the offset should be measured so that the maximum displacement of point on paper from both the sources of error be the same?  

3

b) Differentiate between a prismatic and surveyor’s compass.  

5

Q.6  
a) Describe the characteristics of contours.  
b) What are various uses of contour maps?  

4

Q.7  
a) Discuss the applications of global positioning system in surveying.  
b) Explain various obstacles encountered in surveying.  

4
Bachelor of Architecture and Planning–Third Semester
THEORY OF ARCHITECTURE-I (AR-307)

Time: 3 hrs  Max Marks: 60
No. of pages: 1

Note: Attempt **FIVE** questions in all; **Q.1 is compulsory**. Attempt any **TWO** questions from **Part A** and **TWO** questions from **Part B**. Each question carries equal marks.

Q.1 What are the impacts of the industrial revolution on architecture? Trace the various architects started using R.C.C. as a building material and use of technologies in architecture.

20

**PART-A**

Q.2 Explain modernism in architecture. Illustrate the characteristics of modern architecture in detail.

10

Q.3 Explain any two the famous saying and justify in architecture:
   a) Antonio Gaudi.
   b) F.L. Wright.
   c) Mies Vender Rohe.

5x2

Q.4 Trace theories and expressions of two Post-Modernist Architects

10

**PART-B**

Q.5 Compare following different theories and expressions of architects:
   a) Art Noveau and Bauhaus.
   b) Form follows function and function follows forms.

5

Q.6 Explain ‘deconstruction movement’ in detail.

10

Q.7 Explain the philosophy of Architects Le Corbusier.

10
Bachelor of Architecture - Third Semester
BUILDING SERVICES-I (WATER SUPPLY AND SANITATION)(AR-308)

Time: 3 hrs Max Marks. 60
No. of pages: 1

Note: Attempt FIVE questions in all. Q.1 is compulsory. Attempt any TWO questions from PART-A and TWO questions from PART-B. Each question carries equal marks.

Q.1 Write short notes on the following (any four):
   a) Sullage and sewage.
   b) House building sewer and house building drain.
   c) Branch and stack.
   d) Coagulation and flocculation.
   e) Inspection chambers. 3x4

PART-A

Q.2 Explain the function and purpose of floor tarps and intercepting traps. Draw the sketches also. 12

Q.3 a) What is a septic tank? Make a schematic section of the same. 6
   b) Draft the typical house water connection and differentiate the Government’s property and the owner’s property in the sketch. 6

Q.4 Write down the purpose and diameter of the following pipes (any four):
   a) Soil pipe.
   b) Waste Pipe (horizontal).
   c) Vent pipe.
   d) Rain water pipe.
   e) Water supply pipe. 3x4

PART-B

Q.5 Explain the following types of drainage system:
   a) Two pipe system.
   b) One pipe system.
   c) Single stack system.
   d) Hybrid system. 3x4

Q.6 Draft the layout of a public toilet consisting of male and female toilets separately and mark its sewerage system. 12

Q.7 Explain indirect hot and cold water supply system with sketches. 12
Bachelor of Architecture- Forth Semester
HISTORY OF ARCHITECTURE-II (AR-404)

Time: 3 hrs
Max Marks: 60
No. of pages: 1

Note: Attempt any **FIVE** questions in all. **Q.1 is Compulsory.** Attempt any **TWO** questions from **PART A** and **TWO** questions from **PART B.** Each question carries equal marks.

Q.1 Write short notes of the following:
   a) Baroque architecture.
   b) Renaissance architecture.
   c) Building materials post industrial revolution.
   d) Mies van der Rohe.  
   
   PART-A

Q.2 Who are considered as the founding father of modern architecture? Discuss their contributions to modern architecture in detail.
   12

Q.3 Discuss the evolution of Gothic architecture and also discuss the architecture of the church of Notre Dame?
   12

Q.4 What were the hallmarks of Baroque architecture? Describe them with examples.
   12

   PART-B

Q.5 Discuss the effects of industrial revolution on the architecture of that period.
   12

Q.6 Discuss the role of Le Corbusier in the shaping of modern architecture?
   12

Q.7 Describe the concepts of Frank Lloyd Wright and Organic architecture with examples. 12
Bachelor of Architecture – Forth Semester
STRUCTURAL DESIGN-IV(AR-405)

Time: 3 hrs  MaxMarks.60
Note: Attempt any FIVE questions in all; PART - A is compulsory. Attempt any FOUE questions from PART - B.

PART-A

Q.1 Define the following:
   a) Short column.
   b) Height of a staircase.
   c) One way slab.
   d) Draw the stress and strain diagram for a singly reinforced rectangular section under flexure.
   e) Tread and riser.
   f) Slenderness ratio.

PART-B

Q.2 What are the assumptions of working stress method and limit state method? Also highlight the differences between the two methods.

Q.3 Design a rectangular reinforced beam to resist factored moment of 120 kN/m. Assume grades of concrete M25 and Fe415 steel. Show the detailing also.

Q.4 Design the reinforcement in a column of size 450mmx600mm, subjected to an arial load of 2000 kN service load. The column has an unsupported length of 3m and is braced in both directions. Use M20 concrete and Fe415 steel.

Q.5 Explain different types of slabs with the help of neat sketches. Appreciate the difference between one way and two way slabs.

Q.6 A straight staircase is made of independent tread slabs, cantilevered from RC wall. Given that riser is 140 mm, tread is 300mm and width of flight is 1.7m, design a tread slab. Assume live load is 5 kN/m². Use M20 concrete and Fe 250 steel.
Bachelor of Architecture - Fourth Semester
BUILDING SERVICES-II (AR-406)

Time: 3 hrs
Max Marks. 60
No. of pages: 1

Note: Attempt any SIX questions in all; Part - A is compulsory and any FIVE questions from Part - B. Each question carries equal marks.

PART-A

Q.1 Write short notes on the following:
   a) OHM’s Law.
   b) Distribution board.
   c) Earth fault.
   d) Glare.
   e) Illumination level.

PART-B

Q.2 What are the various types/methods of wiring systems in a building?
   10

Q.3 What are the various types of luminaries for interior and exterior lighting?
   10

Q.4 Define and explain the following circuit protection devices:
   a) Fuses.
   b) MCB’s.
   c) ELCB.
   10

Q.5 Explain the following lighting schemes with the help of well-defined sketches:
   a) Ambient lighting.
   b) Accent lighting.
   c) Task lighting.
   10

Q.6 What are the factors to be kept in mind while designing a good lighting scheme for a space? Discuss with sketches.
   10

Q.7 Draw the schematic diagram that shows the energy flow from generation to distribution of electricity.
   a) Two pipe system.
   b) One pipe system.
   c) Single stack system.
   d) Hybrid system.
   10
Q.8 Draft the layout of a public toilet consisting of male and female toilets separately and mark its sewerage system.
Q.1 What are the architecture movements starting from 18th to 20th century? Explain the comparative analysis theories, expressions and relevance of architecture movements as a social phenomenon. 20

PART-A

Q.2 Compare different theories and expression of High Tech and Minimalist architecture movements. 10

Q.3 Explain the reason for evolution of different architecture movements and architects involved. 10

Q.4 Sketch the architecture of deconstructivist Architects - Zaha Hadid and Santiago Calatrava explaining theories and expressions. 10

PART-B

Q.5 Explain two different theories and expression of Metabolism and Symbolism in architecture. 10

Q.6 How modernism is different from post modernism in architecture. 10

Q.7 Justify visual dynamism and structural dynamism generates symbiotic forms. 10
Q.1 Define Vernacular Architecture. What are the determinants of Vernacular Architecture.

20

PART-A

Q.2 How vernacular architecture is influenced by following factor. Explain with examples.

10

Q.3 Explain Social culture and economical factors.

10

Q.4 Explain material and technology.

10

PART-B

Q.5 Define Climatic factors.

10

Q.6 Describe in detail the different climates of India and different materials used

10

Q.7 Explain Vernacular settlement of different zones of India.

10
Bachelor of Architecture - Fifth Semester
HISTORY OF ARCHITECTURE-III (AR-504)

Time: 3 hrs
Max Marks: 60
No. of pages: 1

Note: Attempt any FIVE questions in all. Q.1 is Compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 Write short notes on the following:
   a) Vedic village characteristic.
   b) Aryan invasion.
   c) Inodo Aryan and Dravidian style.
   d) Aihole Temple.  

   PART-A

Q.2 Describe in detail the Indus valley civilization, its various sites, highlights and what were the possible reasons for its abrupt end.  

Q.3 Describe the evaluation of Hindu temple architecture from the Buddhist period to the Chalukyan phase and the effect Buddhist rock-cut architecture had on early Chalukyan phase.  

Q.4 Describe the architecture of the Brihadishwara temple at Thanjavur.  

   PART-B

Q.5 Elaborate the major architectural features of Buddhist architecture rock-cut, Chaityas and Viharas. Describe the architectural features of the Stupa of Sanchi.  

Q.6 Discuss the fusion of Dravida and Nagara styles seen in Chalukyan architecture.  

Q.7 Explain the architecture characteristics of any two of the following:
   a) Stupa.
   b) KarliChaitya Hall.
   c) KandariyaMahadev Temple.  
PART-A

Q.1 Define the following:
   a) Retaining walls.
   b) Purlin with a neat sketch.
   c) Browsing truss with a neat sketch.
   d) Welding.
   e) Stiffness.
   f) Throat of fillet weld.
   g) Tall shear wall.
   h) Drainage of backfill in case of retaining walls.
   i) Riveting.
   j) Bolting.

2x10

PART-B

Q.2 Define ‘shear walls’. How are these classified? 10

Q.3 Describe different types of retaining walls with the help of neat sketches. 10

Q.4 Solve the following:
   a) Calculate the maximum tension that the flat connected to gusset plate can carry if diameter of rivets is 22 mm and the permissible tensile stress in the flat is 150 mpa.

   b) Give the expression for calculation of maximum axial compressive load (P) and permissible stress in axial compression (T_{ac}) in case of axially load compression member.
Q.5 Check the stability of the cantilever retaining wall. The allowable soil pressure is $500 \text{kN/m}^2 \cdot \phi' = 34^\circ \delta = 25^\circ, \phi = 19 \text{kN/m}^3, i = 15, Ka = 0.311$.

Q.6 A 16 mm thick plate is joined by double cover butt joint using a 10 mm thick cover plate. The permissible tensile strength ($T_{at}$) of 150 MPa. Determine the strength and efficiency of the joint per pitch of 9 cm if 20 mm diameter power driven field rivets are used.

Q.7 Design a suitable fitted weld to connect a tie bar $75 \times 10 \text{mm}$ to a 12 mm thick gusset plate. The permissible stresses in the tie bar and fillet weld are 150 MPa and 108 MPa respectively.
Bachelor of Architecture - Fifth Semester
BUILDING ECONOMICS AND TECHNOLOGIES-I (AR-506)

Time: 3 hrs  Max Marks: 60
No. of pages: 1

1
Note: Attempt FIVE questions in all; Q.No.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

PART-A

Q.1 Explain the following with examples (any two):
   a) Building economics.
   b) Scope and importance of building economics.
   c) Construction cost.

10x2

Q.2 “Life cycle cost analysis is a great idea and powerful tool for providing a base for broader decision making in building economics”. Discuss the statement in detail.
10

Q.3 Explain effective cost construction techniques and factors affecting construction cost estimation of a building.
10

Q.4 Explain cost and project cost management in detail.
10

PART-B

Q.5 How cost reduction of a building is done through planning, designing specifications of building involving space optimization and structural innovations?
10

Q.6 Explain operational cost of a building.
10

Q.7 Differentiate between ‘repair’ and ‘maintenance cost’.
10
Bachelor of Architecture- Fifth Semester
BUILDING SERVICES-III (ILLUMINATION AND ACOUSTICS)(AR-507)

Time: 3 hrs. Max Marks: 60
No. of pages: 1

Note: Attempt FIVE questions in all; Q.1 is compulsory. Attempt any TWO questions from Part A and TWO questions from Part B. Each question carries equal marks.

Q.1 What do you understand by illumination and what is its importance in architecture design? Explain with reference to direct, indirect and diffused lighting and also draw its neat sketches. 12

PART-A

Q.2 What are the lighting sources and what are its components? Explain parameters of Day lighting and how effectively it can be used in architecture designing in active and passive ways. 12

Q.3 Define indoor and outdoor lighting with three examples of each along with the advantages and disadvantages. 12

Q.4 Explain the principle of lighting and distribution of light through inverse square law. Calculate it for the example given below:
A point light source of intensity of 1000 candela and light falls perpendicularly on the surface. Calculate the illuminance at 2m, 4m and 6m. 12

PART-B

Q.5 A Shopping complex has area: 10 meter; width: 10 meter; height: 3.6 meter with a false ceiling of 600mm(2').
  • The ceiling to desk height (illuminated surface) is 3 meters.
  • The area is to be illuminated to a general level of 450 lux using lamp 40 watt, luminaires with a SHR of 1.25.
  • Each lamp has an initial output (efficiency) of 85 lumen per watt.
  • The lamps Maintenance Factor (MF) is 0.63, utilization factor is 0.69 and space height ratio (SHR) is 1.25.
Design the lighting layout of the Shopping Complex. 12

Q.6 Explain the following:
a) Maintenance factor (MF).
b) Utilization factor(UF).
c) Space Height Ratio(SHR).
d) Color Rendering Index(CRI). 3x4

Q.7 What do you understand by acoustic? What are the various acoustical defects? Suggest measures to solve them. 12
Q.1 Explain the following in brief:
   a) Water in landscape.
   b) Topography in landscape.
   c) Principle’s of landscape design.
   d) Landscape supports site acoustics.
   e) Formal and informal garden.

Q.2 Trace an essay on importance of landscape design in Site Planning.

Q.3 Explain the following elements of landscape:
   a) Softscape.
   b) Hardscape.

Q.4 Explain anytwo of the following:
   a) Pavements.
   b) Water.
   c) Role of services in Landscaping.

Q.5 Explain historical perspective of landscape garden from earlier period to contemporary period.

Q.6 Describe design principles of any two elements of the following landscape:
   a) Renaissance garden.
   b) Japanese garden.
   c) Chinese garden.

Q.7 Write short notes on anytwo of the following:
   a) Chinese Garden.
   b) Persian garden.
   c) Mughal garden.