

Title of the Course : Mathematics

Full Marks : 60

Course No: 0541 01 Math 1153

Time : 03 Hours

* Figures in the right margin indicate full marks.

Section-AThere are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) Transform the equation $x^2 - 2xy + y^2 + 2x - 4y + 3 = 0$, when the direction of axes is turned through an angle 45° where as the origin of coordinates remains same. [L5; CLO1] **05**
- b) Show that, the equation $x^2 + 6xy + 9y^2 + 4x + 12y - 5 = 0$ represents two parallel straight lines and the distance between them is $\frac{3\sqrt{10}}{5}$. [L5; CLO1] **05**
- Q.2 a) Find the equation of bisector of the angle between the two straight lines represented by the equation $xy + y^2 - 2x - 5y + 6 = 0$. [L5; CLO3] **05**
- b) Reduce the equation $5x^2 + 2xy + 5y^2 + 10x - 22y + 29 = 0$ to its standard form. [L5; CLO3] **05**
- Q.3 a) Define pole and polar line of a circle. Find the equation of the transverse common tangents of the circle $x^2 + y^2 - x - 2y + 1 = 0$, $2x^2 + 2y^2 - 3x + 4y = 0$. [L5; CLO3] **05**
- b) Find the equation of a circle which passes through the points (3, 5) and (5, -3) and has its center on the line $2x + y = 27$. [L5; CLO3] **05**
- Q.4 a) If l_1 and l_2 are the length of the segments of any focal chord of the parabola $y^2 = 4ax$, then prove that $\frac{1}{l_1} + \frac{1}{l_2} = \frac{1}{a}$. [L5; CLO1] **05**
- b) Find the condition that a plane $lx + my + nz = 0$ touches the cone $ax^2 + by^2 + cz^2 + 2hxy + 2gzx + 2fyz = 0$. [L5; CLO1] **05**

Section-BThere are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) Draw the following function and also find the domain and range of $f(x) = \begin{cases} 2x + 6; & -3 \leq x \leq 0 \\ 6; & 0 < x < 2 \\ 2x - 6; & 2 \leq x \leq 5 \end{cases}$ [L5; CLO2] **05**
- b) Discuss the continuity and differentiability of the function $f(x) = \begin{cases} 2x - 1 & \text{when } x \leq 1 \\ 1 & \text{when } 0 \leq x < 1 \\ 1 - 2x & \text{when } x < 0 \end{cases}$ at $x = 1$ [L2; CLO2] **05**
- Q.2 a) Define maxima of a function at a point. Find the extreme values of $f(x) = 2x^3 - 3x^2 - 12x$. [L5; CLO2] **05**
- b) Find the equation of the tangent and the normal to the curve $y(x - 2)(x - 3) - x + 7 = 0$ at the point where it cuts the x axis. [L5; CLO2] **05**
- Q.3 a) Integrate $\int \frac{dx}{(x^2+1)\sqrt{1-x^2}}$. [L5; CLO2] **05**
- b) Evaluate $\int_0^{\frac{\pi}{2}} \frac{\sqrt{\tan x}}{1+\sqrt{\tan x}} dx$. [L5; CLO2] **05**
- Q.4 a) Define extrema and critical point. Find the extrema of the function $f(x) = 3x^4 - 4x^3 - 12x^2 + 5$. [L5; CLO2] **05**
- b) Find the area of the region enclosed by $x = y^2$ and $y = x - 2$. [L5; CLO3] **05**

Title of the Course : **Aesthetic and Visual Arts**
Course No: **0213 01 FA 1171**

Full Marks : 60
Time : 03 Hours

* Figures in the right margin indicate full marks.

Section-A

There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 Distinguish Western Art from Non-Western Art with examples. **10**
[L4; CLO1]
- Q.2 Elucidate the key qualities in any work of art. [L2; CLO1] **10**
- Q.3 Highlight the relationship among Aesthetics, Beauty and Art with necessary illustrations. [L3; CLO2] **10**
- Q.4 Write ten sentences paragraph on any two. **05x2=10**
- a) Post- independence art in Bangladesh. [L3; CLO1]
 - b) Four steps of Art Criticism. [L5; CLO2]
 - c) Gestalt Principles in the Visual Arts [L2; CLO3]

Section-B

There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 Which indicators/components would you use to evaluate the aesthetics of architecture? Justify your selection. [L5; CLO2] **10**
- Q.2 “Design and art are entangled; designers are expected to be ‘artistic’ yet more constrained.” Justify using examples. [L4; CLO3] **10**
- Q.3 How does J. Pallasmaa’s *The Eyes of the Skin* looks at architecture beyond its mere functional and visual dimensions? [L4; CLO3] **10**
- Q.4 Write explanatory notes on any two. **05x2=10**
- a) *Genius Loci* [L2; CLO1]
 - b) Aesthetics of the Ruin [L3; CLO2]
 - c) Art in Architecture [L3; CLO3]

Title of the Course : **Design Thinking**
Course No: **0731 01 Arch 1101**Full Marks : 60
Time : 03 Hours

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Section-AThere are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 Identify the major types of influences on architectural design. Choose one specific type and explain its impact on architectural design with appropriate examples. [L3; CLO1] **02+08=10**
- Q.2 a) Specify different purposes of 'Surface Articulation' with examples. [L2; CLO2] **05**
b) Illustrate the possible reasons behind the collision of forms in architectural design. Provide diagrams or sketches if necessary. [L2; CLO3] **05**
- Q.3 Choose any public space in your city and explain the major factors that have transformed this space into a meaningful place. Include relevant sketches or drawings to support your explanation. [L5; CLO4] **10**
- Q.4 Compare and contrast analogies and metaphors as architectural design concepts, using relevant examples to support your answer. [L4; CLO4] **10**

Section-BThere are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 Do you think the "Complete Model of Design Problems" is essential for a designer to pay close attention to different parts of a design problem? Construct your opinion by explaining the generators of design problems, the domain of design constraints, and the function of design constraints with examples. [L5; CLO4] **10**
- Q.2 a) Summarize the historical evolution of design thinking and explain how it influenced architectural practice over time. [L2; CLO1] **05**
b) "The professionalisation of design has transformed the role of designers." Justify this statement with relevant examples. [L5; CLO4] **05**
- Q.3 a) Differentiate the roles of divergent and convergent thinking at various stages of the architectural design process. [L4; CLO3] **04**
b) Illustrate the role of different visual thinking tools in guiding the evolution of an architectural concept from initial imagination to organised spatial form. Support your answer with at least two examples. [L2; CLO5] **06**
- Q.4 If you were assigned to design an architectural space, how would you apply critical, creative, and collaborative problem-solving skills throughout your design-thinking process? Illustrate your approach with examples or sketches where necessary. [L3; CLO5] **10**

Title of the Course : **Communicative English**
Course No: **0231 01 Eng 1151**

Full Marks : 60
Time : 03 Hours

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Section-A

There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) Explain the following word formation process with examples: **01x05=05**
i) Blending ii) Affixation iii) Coinage iv) Acronym v) Borrowing
[L2; CLO1]
- b) Formulate a word with the following affixes and frame one sentence **01x05=05**
using each of the new word: [L3; CLO1]
i) -tion ii) -sion iii) -pre iv) -ness v) -il
- Q.2 a) Define intonation and stress. [L1; CLO3] **03**
- b) Explain the rules of intonation and stress. [L2; CLO3] **07**
- Q.3 a) Fill in the gaps using appropriate preposition: [L3; CLO1] **01x05=05**
i) He hesitates _____ nothing.
ii) He is angry _____ us.
iii) I met him _____ the street.
iv) The car drove _____ us.
v) I was born _____ May.
- b) Construct a functional sentence using the following notions: **01x05=05**
i) Request ii) Deny iii) Agreement iv) Advice v) Invite
[L3; CLO3]
- Q.4 a) Write a note on the art of good speaking. [L5; CLO3] **05**
- b) List the differences between Intensive and Extensive Reading. **05**
[L4; CLO2]

Section-B

There are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 Explain how students can develop his/her listening skills. **10**
[L5; CLO3]
- Q.2 Discuss the features and elements of Academic Writing. [L4; CLO1] **10**
- Q.3 Write a paragraph on: "AI in Digital Art and Design." [L5; CLO4] **10**
- Q.4 a) Write short notes on: **05**
"Product approach and Process approach in writing." [L2; CLO6]
- b) Suppose you are a member of the club 'Clean and Green Campus' **05**
of your university. Your club has organized a seminar on "The
Importance of Cleanliness and the Impact of Environmental
Pollution". Now draft a short report regarding it for an English
Daily. [L6; CLO6]

Title of the Course: **Cultural Anthropology**
Course No: **0314 01 Soc 1251**Full Marks: 60
Time: 03 Hours

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Section-AThere are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 What is cultural anthropology? Explain why cultural anthropology is important for architecture students. In your answer, discuss how observation, interpretation, and cultural reading help architects understand people's everyday use of space. [L2; CLO 3] **10**
- Q.2 Architecture often reflects the social imagination of its time. Explain how the transition from modernist ideas of order, function, and universality to postmodern concerns with plurality, memory, identity, and representation indicates a broader transformation in society. Discuss with relevant architectural examples. [L3; CLO 2] **10**
- Q.3 In contemporary consumer culture, many spaces are designed to be photographed, circulated, and consumed as images. Critically discuss how social media, branding, visual desire, and capitalist consumption are reshaping the production and experience of architectural space. [L5; CLO 4] **10**
- Q.4 Erving Goffman suggests that social life involves the presentation of self in different settings. In light of this idea, explain how the question "Who am I?" is shaped by society, culture, roles, and spatial context. [L4; CLO 1] **10**

Section-BThere are **four (04)** questions in this section. Answer any **three (03)** questions.

- Q.1 a) What are the symbols of culture? [L1; CLO 1] **02**
b) Is culture symbolic? If so, how do these symbols affect a certain society? [L2; CLO 2] **08**
- Q.2 Evaluate how human behavior, social identity, and cultural values influence the design, form, and identity of architecture in different societies. Use relevant examples. [L5; CLO 5] **10**
- Q.3 How do local beliefs and customs influence spatial organization in traditional dwellings? Critically discuss what strategies architects can use to balance cultural heritage with modern design needs. [L4; CLO 3] **10**
- Q.4 Explain the reciprocal relationship between architecture and culture. Use Makkah and Las Vegas as examples. [L2; CLO 4] **10**