

			<p>Programming and Data Structures</p> <p>Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.</p> <p>Algorithms</p> <p>Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph search, minimum spanning trees, shortest paths.</p> <p>Theory of Computation</p> <p>Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.</p> <p>Compiler Design</p> <p>Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.</p> <p>Operating System</p> <p>Processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.</p> <p>Databases</p> <p>ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.</p> <p>Computer Networks</p> <p>Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls.</p>
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## 9. SCHOOL OF ARTS & AESTHETICS

**The pattern of JNUEE 2022-23 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)**

**Ph.D.**

Sl. No.	Name of School	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Arts & Aesthetics (SA&A)	<b>Ph.D. : Visual Studies – VSAH (900)</b>	<p>Note: The programme is suited for students who come from a background in Visual Studies/ Art History and related disciplines. Candidates are expected to already be familiar with the discipline of art history and its theoretical concerns in general and with the development of Indian art and architecture in particular. To appear for the entrance exam, prospective candidates should have a broad understanding of the intellectual history of the discipline and key philosophical concerns of image theories. They should be familiar with the topics listed below which are areas covered by Masters-level programmes. Questions set by the School are designed to assess the candidate's ability to reflect upon and critically engage with themes and issues related to art and visual culture.</p> <p>Candidates appearing for the entrance examination should be familiar with the following:</p>

			<p>Contribution of theorists whose work has shaped/ impacted art historical, critical and anthropological discourse on the visual arts and visual culture.</p> <p>Research Methodology and Historiography of the discipline: art criticism and art history writing and archival structures as subjects of inquiry and meta-critical practices.</p> <p>Artworks as modes of symbolic communication and methodologies of decipherment of visual codes and visual language systems.</p> <p>Methodological approaches to interpreting the visual: iconography, semiotics, formalism, cultural materialism, psychoanalysis, narratology, phenomenology, affect theory, theories of gender, feminist and post-colonial critiques.</p> <p>The entanglements of ethno-nationalism and art history</p> <p>The interrelationship of textual and visual traditions in Indian art.</p> <p>The social and political and conditions that govern the agency of art and artists and impact visual representations.</p> <p>The relationship between political, economic and liturgical institutions and monumental built forms.</p> <p>Current debates about the agency and representation of caste, class and gender in pre-modern arts.</p> <p>Capitalism, individualism and the relationship with artistic authorship.</p> <p>Debates around authorship in Indian art.</p> <p>Concepts of space and place in architecture and spatiotemporal understanding of built form including relationships between architecture and ritual performance.</p> <p>The network of institutional agencies in which art works are embedded. Institutional critique and its own institutionalization.</p> <p>Iconophilia, iconopraxis and iconoclasm.</p> <p>Sectarian competitiveness and the “clash of icons.”</p> <p>Technologies of art-making, intentionalities of choice and theoretical understanding of creative labour.</p> <p>Interactivity, community art and relational aesthetics in contemporary visual culture.</p> <p>The construction of heritage vis a vis national and global framework.</p> <p>Photography theory, digital convergence and “remediation”.</p>
2		<b>Ph.D. : Theatre &amp; Performance Studies- TPSH (901)</b>	<p>Note: Theatre and Performance Studies covers a wide range of subjects, including the history of theatre, dance and music with a particular focus on the study of embodied performance. Students appearing for the entrance exam for the Theatre and Performance Studies stream should have some broad knowledge of the intellectual concerns and issues linked to the discipline. They should be familiar with the topics listed below which are areas covered by Masters level programmes. Questions set by the School are designed to assess the candidate's ability to reflect upon and critically engage with themes and issues related to theatre and performance.</p> <p>Candidates appearing for the entrance examination should be familiar with the following:</p> <p>Concepts related to performance and aesthetics, such as <i>rasa</i>, <i>dhvani</i>, catharsis, tragedy, alienation, corporeality, embodiment, liminality, efficacy;</p> <p>Basic knowledge and understanding of the discourse around primary texts such as <i>Natyasastra</i>, <i>Dhvanyaloka</i>, <i>Abhinaya Darpana</i> and <i>The Poetics</i>;</p> <p>Institutions of performance such as National School of Drama, Sangeet Natak Akademi, Ninasam, Kalakshetra, Kalamandalam;</p> <p><i>Sufi</i> and <i>bhakti</i> performing arts traditions;</p> <p>Regional culture and performance practices (theatre, dance, music, puppetry and others) in India;</p> <p>Histories and theories of political theatre;</p> <p>Histories of Indian musical traditions;</p> <p>Histories of traditions and transitions in dance;</p> <p>Feminism, gender and performance;</p> <p>Comic traditions in performance;</p> <p>Nation, nationalism and performance;</p> <p>Post-colonial performances;</p> <p>Debates in modern Indian theatre, music and dance.</p> <p>Applied theatre and performance;</p> <p>Street theatre;</p> <p>Globalisation and performance;</p> <p>Performance art</p> <p>Discourses, theories and research methodologies around the emergence of disciplines of</p>

			theatre and performance studies, dance studies, music studies.
3		<b>Ph.D. : Cinema Studies - CNSH (902)</b>	<p><u>Note:</u> The programmes draw students either from a background in Cinema/Film Studies or from other disciplines with an interest in the subject. Students appearing for the entrance exam for the Cinema Studies stream should have some broad knowledge of the intellectual concerns and issues linked to the discipline. They should be familiar with the topics listed below which are areas covered by Masters level programmes. Questions set by the School are designed to assess the candidate's ability to reflect upon and critically engage with themes and issues related to cinema including:</p> <p>Indian Cinema History  Globalization and Indian Cinema  National Cinema Debates  International Film Movements  Issues and Debates in Research Methodology  Media and Cultural Studies  Sound and Colour in the History of Cinema  Authorship Debates  Theories of Genre  Melodrama: Forms and Histories  Film Stardom and Celebrity Culture  Early Debates and Discourses on Film  Modernism, Mass Culture and Cinema  Media Aesthetics  Space, Architecture and Cinema  Film/Media: Sound and Colour  Theories of the Cinematic Avant Garde  The Cinematic Apparatus  Cinema and the Postmodern  Television and Video Theory  Post Cinematic and Post Celluloid Debates  Media Sensorium and Media Archaeology Debates  Embodiment and Affect in Film/Media  The Cultural Politics of Speed, Surveillance and Forensics in Cinema/Media  The Archive Effect and Memory  Digital Culture and the Internet  Questions on research methodology have to be posed in the context of these issues.</p>