

			<p>Microwave and Antennas Introduction & Wave Propagation Review of Maxwell's equations, Integral and Point forms; Boundary conditions; Power flow and Poynting vector; Propagation of uniform plane waves, Wave equation; Polarization. Scalar and Vector Potential functions, Retarded Potentials; Radiation phenomenon and equation, Basic antenna parameters: radiation resistance, Gain, directivity, Effective length, Radiation pattern; Radiation from short current element, Radiation from small current loop, radiation from arbitrary current distribution, half wave dipole antenna; Antenna impedance, Monopole antenna, Baluns, Antenna array: Broadside array and end-fire arrays, long wire antenna; Few antenna types: Folded dipole, Loop antenna, Yagi-Uda Antenna; Wave propagation, Travelling waves, Lossless and Lossy transmission lines, pulse propagation; Principle, construction and working of Microwave solid state devices: Transferred Electron devices: Gunn Diode (Gunn Effect), IMPATT diode, PIN diode Attenuators, Terminators, Directional couplers; Hybrid Circuits</p>
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9. SCHOOL OF ARTS & AESTHETICS

The pattern of JNUEE 2020-21 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

Master of Arts

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Arts & Aesthetics (SA&A)	Arts & Aesthetics-SAAM (235)	<p><u>Note</u>: Candidates attempting the entrance exam of the integrated MA should have a broad sense of the areas listed under all the three streams of the School – Visual Studies, Cinema Studies and Theatre and Performance Studies. Questions set by the School typically ask questions that assess the candidate's ability to reflect upon and critically engage with themes and issues related to art.</p> <p>Visual Studies Broad knowledge of the history of world art in general, and of art in South Asia, from Indus Valley Civilization till the present, in particular. Candidates should have an understanding of formal, stylistic and iconographic aspects of South Asian art and be able to place them in their literary, cultural, historical, religious and liturgical context. In addition, a broad knowledge of the history of Western Art, from the Renaissance to the present day, and of the history of Asian art, including Far Eastern and Islamic art, are valuable. An awareness of current debates and new developments around art, heritage, museums and exhibitions is important, with an emphasis on the ability to critically engage with issues and themes related to art.</p> <p>Cinema Studies Broad knowledge of World Cinema, Film Movements, and Film/Media Practitioners. There should be awareness of cinema/ media's status as an aesthetic practice, a mass cultural form, and an instigator of public debates. Candidates should display their knowledge of the public presence of cinema/media and the way certain film practices get linked to political controversies, festival bans, censorship debates, and vandalism at exhibition venues. Some knowledge of the role of film criticism and writing about cinema in the popular press will be helpful.</p> <p>Theatre and Performance Studies Broad knowledge of the history of theatre and dance including classical Greek theatre, Elizabethan theatre, classical Indian theatre, music, dance and performance cultures, <i>bhakti</i> performance traditions in India, modern theatre and contemporary performance practices. Some familiarity with dance in the larger context of Indian dance history, relationship of dance and society. Likewise, an engagement with musical traditions, both classical and popular. Some awareness of basic concepts like <i>rasa</i> and catharsis, the dynamics of body, space and time in different theatrical and dance traditions, the role of the actor/performer and</p>

			spectator. Basic knowledge of the theoretical writings of Bharata, Bhatkhande, Kapila Vatsyayan, Susan Foster, Stanislavski, Brecht, Augusto Boal, Badal Sircar. An ability to see performances critically with an awareness of their social and political contexts. Emphasis on the capacity to describe the performances of everyday life, including festivals, rituals and ceremonies experienced at a local level within specific regional contexts.
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M.Phil & Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Arts & Aesthetics (SA&A)	M.Phil : Visual Studies – VSAP (163) Ph.D. : Visual Studies – VSAH (900)	<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. Research Methodology and Historiography of the discipline: art criticism and art history writing and archival structures as subjects of inquiry and meta-critical practices. Artworks as modes of symbolic communication and methodologies of decipherment of visual codes and visual language systems. Methodological approaches to interpreting the visual: iconography, semiotics, formalism, cultural materialism, psychoanalysis, narratology, phenomenology, affect theory, theories of gender, feminist and post-colonial critiques. The entanglements of ethno-nationalism and art history The interrelationship of textual and visual traditions in Indian art. The social and political and conditions that govern the agency of art and artists and impact visual representations. The relationship between political, economic and liturgical institutions and monumental built forms. Current debates about the agency and representation of caste, class and gender in pre-modern arts. Capitalism, individualism and the relationship with artistic authorship. Debates around authorship in Indian art. Concepts of space and place in architecture and spatiotemporal understanding of built form including relationships between architecture and ritual performance. The network of institutional agencies in which art works are embedded. Institutional critique and its own institutionalization. Iconophilia, iconopraxis and iconoclasm. Sectarian competitiveness and the "clash of icons." Technologies of art-making, intentionalities of choice and theoretical understanding of creative labour. Interactivity, community art and relational aesthetics in contemporary visual culture. The construction of heritage vis a vis national and global frameworks. Photography theory, digital convergence and "remediation".</p>
2		M.Phil : Theatre & Performance Studies- TPSP (164) Ph.D. : Theatre & Performance Studies- TPSH	<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</p>

	(901)	<p>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 theatre and performance studies, dance studies, music studies.</p>
3	<p>M.Phil : Cinema Studies- CNSP (165)</p> <p>Ph.D. : Cinema Studies - CNSH (902)</p>	<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</p> <p>Globalization and Indian Cinema</p> <p>National Cinema Debates</p> <p>Issues and Debates in Research Methodology</p> <p>Media and Cultural Studies</p> <p>Sound and Colour in the History of Cinema</p> <p>Authorship Debates</p> <p>Theories of Genre</p> <p>Film Stardom and Celebrity Culture</p> <p>Early Debates and Discourses on Film</p> <p>Modernism, Mass Culture and Cinema</p> <p>Theories of the Cinematic Avant Garde</p> <p>The Cinematic Apparatus</p> <p>Cinema and the Postmodern</p> <p>Television and Video Theory</p>

			<p>The Post Cinematic and Post Celluloid Debates</p> <p>Media Sensorium and Media Archaeology Debates</p> <p>Embodiment and Affect in Film/Media</p> <p>The Cultural Politics of Speed, Surveillance and Forensics in Cinema/Media</p> <p>The Archive Effect and Memory</p> <p>Digital Culture and the Internet</p>
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10. SCHOOL OF BIOTECHNOLOGY

The pattern of JNUEE 2020-21 will be based on Multiple Choice Questions (MCQs) through Computer Based Test (CBT)

Ph.D.

Sl. No.	Name of Centre	Sub. Code & Sub. Code Number	Syllabus for Entrance Examination
1	School of Biotechnology	Biotechnology – SBTH (904)	<p><u>Chemistry</u> <i>Chemical periodicity, Structure and bonding, Concepts of acids and bases, Properties and functions of metals and non-metals, Transition elements and coordination compounds, Characterisation of inorganic compounds, Analytical chemistry, Nuclear chemistry, Polymer chemistry, Molecular spectroscopy, Chemical thermodynamics, Electrochemistry, Chemical kinetics, Colloids and surfaces, numerical problems related to mole concept, pH, dissociation constants, emf, rate constant etc. IUPAC nomenclature of organic molecules, isomerism, Principles of stereochemistry, Aromaticity, Organic reactive intermediates, Organic reaction mechanism, Common named reactions and rearrangements, Organic transformations and reagents: Functional group interconversion, Asymmetric synthesis, common heterocyclic compounds containing one or two heteroatoms (O, N, S), Chemistry of natural products: (Carbohydrates, proteins and peptides, fatty acids, nucleic acids etc.), Structure determination of organic compounds.</i></p> <p><i>Physics, Chemistry and Mathematics Class XIIth Syllabus (As per CBSE)</i></p> <p><u>Biochemistry</u></p> <p><i>Biomolecules Amino Acids, Peptides and Proteins Nucleic Acids, Carbohydrates and Lipids</i></p> <p><i>Enzyme Kinetics and Inhibition Introduction about enzymes, classification, activity, cofactors Chemical Kinetics Regulation of enzyme activity by various factors such as pH, temperature etc. Enzyme Inhibition-various types with examples Kinetics of enzyme inhibition Enzyme activity and purification-sub cellular fractionation and specific activity</i></p> <p><i>Enzymes: Mechanism, Structure and Regulation</i></p>