जाहिर सुचना

उप आयुक्त (उद्यान विभाग), पनवेल महानगपालिका हद्दीत तारांगण बांधणेबाबत आवश्यक बाबींकरिता बाजारभाव दरपत्रके मागविण्यात येत आहे. सदर बाबतचा तांत्रिक तपशील खालीलप्रमाणे आहे.

PANVEL ASTRONOMY AND SPACE MUSEUM					
Sr	**Exhibit**	**Specification**	**Qty**	Unit	Rate
A1	**Solar system on floor**	This exhibit involves the design, construction, and installation of an interactive 8'x8'x3' Solar System Model. The model will feature a robust and precise mechanical system using metal gears and motors, encased in a metal sheet structure with an aesthetically pleasing wooden exterior. It will accurately depict the Sun and 8 planets, ranging in size from 12 inches to 3 inches. Scope of Work Design: Develop a detailed blueprint for the solar system model, incorporating the specified mechanical and material requirements. Materials: Utilize high-quality metals for gears and sheet casing, and premium wood for the exterior. All materials must be durable and safe. Construction: Build the model following the approved design, ensuring precision in the mechanical movements and accurate scaling of celestial bodies. Installation: Deliver and securely install the model at the designated location, ensuring stability and safety. Interactivity: Implement interactive features powered by motors, allowing for realistic planetary movements. Specifications Dimensions: Overall dimensions of 8 feet by 8 feet with a height of 3 feet. Celestial Bodies: Sun and Planets: Represent the Sun and 8 planets with sizes ranging from 12 inches (largest) to 3 inches (smallest). Materials: Use high-quality, durable materials for realistic representation and longevity. Mechanical System: Gears: Precision metal gears for accurate and smooth planetary movement. Motors: 16 motors to drive the movements of the planets, ensuring realistic orbits. Control System: Integrated control system for synchronized and adjustable movements. Casing and Exterior: Metal Sheet Casing: Durable metal sheet casing to house the mechanical components. Wooden Exterior: High-quality wooden work to envelope the metal casing, providing an elegant finish. Scale and Accuracy: Ensure scientific accuracy in the scale of the solar system model. Lighting: Integrated lighting to highlight each celestial body and enhance visibility. Quality Assurance, Durability: The model must withstand regular use and environmental conditions of the installation site . (Representative Image)	1	Per Unit	Rs …….

A2	**Zodiacal Sign Piller set of 12**	This Zodiacal Sign Pillar exhibit is designed to enhance the educational and visual experience of museum visitors, offering an attractive and informative display of the 12 zodiacal sign pillars. All materials and workmanship must be of the highest quality to ensure the longevity and appeal of the exhibit. Dimensions: Overall size of the pillar: 2 feet x 2 feet x 8 feet in height. Materials: The pillar should be constructed using high-quality backlit acrylic to ensure a visually appealing display. The frame and support structures should be fabricated from durable materials suitable for a public exhibit. Design Features: The pillar should display all 12 zodiacal signs on at least 3 surfaces, with each sign clearly represented and illuminated with appropriate information and star patterns. The backlit acrylic should provide even lighting, highlighting each zodiacal sign effectively. The signs should be arranged vertically along the height of the pillar. Fabrication: Precise cutting and fabrication of acrylic to ensure a seamless and aesthetically pleasing appearance. Integration of backlighting to highlight each zodiacal sign, ensuring visibility and appeal in various lighting conditions. Installation: The pillar must be securely installed to ensure stability and safety. Electrical components for backlighting should be safely and neatly integrated within the structure. Operational Requirements: The backlighting system should be energy-efficient and designed for long-term use. The exhibit must be durable and able to withstand continuous public interaction. (Representative Image)	12	Per Unit	Rs …….

A3	**History of Astronomy Wall**	This "Wall of History of Astronomy" exhibit is intended to provide an informative and visually captivating experience for museum visitors, highlighting the key developments and figures in the field of astronomy. All materials and workmanship must be of the highest standard to ensure the longevity and appeal of the exhibit. Dimensions: Overall size of the wall approximately 20 feet in length and 8 feet in height. Materials: High-quality, durable materials suitable for a public exhibit, such as laminated vinyl panels, acrylic, metal, or high-grade plywood. Use of backlit acrylic panels or LED lighting to enhance key elements and provide visual appeal. Display graphics and text printed on durable, high-resolution materials to ensure longevity and readability. Design Features: The wall should chronologically display significant milestones in the history of astronomy, from ancient times to modern-day discoveries. Use of images, timelines, and descriptive text to provide an engaging and educational narrative. Incorporation of interactive elements, such as QR codes, to offer additional information and multimedia content. Integration of lighting elements to highlight important sections and create an immersive experience. Installation: Secure and stable installation of the wall to ensure safety and durability. All electrical components for lighting should be safely and neatly integrated within the structure. All materials and components must be of high quality to withstand continuous public interaction and environmental conditions within the museum. (Representative Image)	1	Per Unit	Rs …….
A4	**Statue of Aryabhata**	This bust of Aryabhatta is intended to honor the renowned mathematician and astronomer, providing an inspiring and educational focal point within the museum. All aspects of the statue, from materials to craftsmanship, must reflect the significance and respect due to this historical figure. The bust should be of life-size proportions to accurately represent Aryabhatta. Materials: The statue should be crafted from high-quality materials, such as resin / fiberglass with a super white finish to ensure durability and an elegant appearance. Design Features: The bust should be a realistic and accurate representation of Aryabhatta, reflecting his historical and cultural significance. The super white finish should be smooth, uniform, and free from imperfections, providing a pristine and visually appealing look. The statue should be mounted on a sturdy base and should be visible at eye level. (Representative Image)	1	Per Unit	Rs …….

A5	**Statue of Bhaskaracharya**	This bust of Bhaskaracharya is intended to honor the renowned mathematician and astronomer, providing an inspiring and educational focal point within the museum. All aspects of the statue, from materials to craftsmanship, must reflect the significance and respect due to this historical figure. The bust should be of life-size proportions to accurately represent Bhaskaracharya. Materials: The statue should be crafted from high-quality materials, such as resin / fiberglass with a super white finish to ensure durability and an elegant appearance. Design Features: The bust should be a realistic and accurate representation of Bhaskaracharya, reflecting his historical and cultural significance. The super white finish should be smooth, uniform, and free from imperfections, providing a pristine and visually appealing look. The statue should be mounted on a sturdy base and should be visible at eye level. (Representative Image)	1	Per Unit	Rs …….
A6	**Model of Jantar Mantar**	This scaled architectural model of Jantar Mantar is intended to provide an educational and visually engaging experience for museum visitors, showcasing the historical and scientific significance of this remarkable observatory. Dimensions: The base size of the model should be 4 feet by 4 feet. The scale of the model should accurately represent the proportions and layout of the original Jantar Mantar. Materials: High-quality materials should be used to ensure durability and accuracy. Suitable materials include: Acrylic / high-grade plastic / Wood or metal for structural elements. The model should be finished with appropriate paints and coatings to enhance realism and durability. Design Features:The model should accurately depict few significant architectural features of Jantar Mantar, including: The Samrat Yantra, The Digamsa Yantra, The Misra Yantra, The Ram Yantra. Use of CNC machining, 3D printing, or other advanced fabrication techniques to achieve detailed and accurate components. All joints and connections should be seamless and secure. Installation: The model must be securely mounted on a stable base to ensure safety and prevent any movement. The base should include a protective acrylic or glass cover to safeguard the model and allow clear viewing. (Representative Image)	1	Per Unit	Rs …….

A7	**Indian Constellations Backlit frame**	This "Indian Constellations on Backlit Frame" exhibit is intended to provide an educational and visually stunning experience for museum visitors, highlighting the rich astronomical heritage of India. Dimensions: The size of the backlit frame should be proportionate to the wall space provided, with a suggested minimum size of 6 feet in width by 4 feet in height to ensure visibility and detail. Materials: The frame should be constructed from high-quality materials such as aluminum or powder-coated steel for durability and a sleek appearance. The constellations should be printed with precision onto the display panel using durable, high-definition printing techniques. Design Features: The exhibit should depict key Indian constellations, accurately represented with stars and constellation lines. Each constellation should be labeled with its traditional name and accompanied by a brief description of its significance in Indian astronomy. The backlighting should provide even illumination across the entire display, enhancing the visibility and attractiveness of the constellations. Lighting: Use energy-efficient LED backlighting to ensure long-term use and reduced energy consumption. The lighting should be evenly distributed to avoid any dark spots or glare, providing a clear and appealing view of the constellations. Fabrication: Precision fabrication to ensure a seamless and professional appearance. Integration of lighting components within the frame to keep the overall design clean and unobtrusive. The frame must be securely mounted on the designated wall space using appropriate fixtures and fittings to ensure stability and safety. (Representative Image)	1	Per Unit	Rs …….

A8	**Hall of Fame Indian Astronomers Backlit frame**	This "Hall of Fame" exhibit is intended to honor and celebrate the significant contributions of Indian astronomers and astrophysicists, providing an educational and inspirational experience for museum visitors. Dimensions and Layout: The exhibit will cover a designated wall space, with individual frames sized to ensure clarity and prominence of each figure. Each frame should be approximately 2 feet x 3 feet in size, but exact dimensions may vary depending on the design layout. Materials: High-quality, durable materials for the frames, such as aluminum or steel, to ensure longevity and stability. Backlit acrylic panels for clear and bright illumination of each framed image and text. Printed graphics on high-resolution, durable material to maintain visual quality over time. Design Features: Each frame should feature a high-quality image of the astronomer or astrophysicist, along with a brief biography and key contributions. The backlighting should be even and provide sufficient illumination to highlight the content without causing glare. (Representative Image)	1	Per Unit	Rs …….
B1	**Satish Dhawan Space Centre Launch Pad**	This scaled architectural model of the Satish Dhawan Space Centre Launch Pad is intended to provide an educational and visually engaging experience for museum visitors, showcasing the technological and scientific significance of this crucial space infrastructure. Dimensions: The base size of the model should be 4 feet by 8 feet. The scale of the model should accurately represent the proportions and layout of the actual launch pad. Materials: High-quality materials should be used to ensure durability and accuracy, including: Acrylic or polycarbonate for transparent elements. Resin or high-grade plastic for detailed components. Wood or metal for structural elements. The model should be finished with appropriate paints and coatings to enhance realism and durability. Design Features: The model should accurately depict all significant architectural features of the Satish Dhawan Space Centre Launch Pad, including: The launch platform, The service towers, The rocket assembly and integration structures, The surrounding infrastructure and facilities, Fine details such as staircases, railings, and other architectural elements should be included. The model should include automated features to enhance the educational experience. Use of CNC machining, 3D printing, or other advanced fabrication techniques to achieve detailed and accurate components. The model must be securely mounted on a stable base to ensure safety and prevent any movement. The base	1	Per Unit	Rs …….

		should include a protective acrylic or glass cover to safeguard the model and allow clear viewing. (Representative Image)			

B2	**ISRO Launch vehicles**	This ISRO Launch Vehicles Wall Mural Exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the achievements and technology of ISRO. Dimensions: The mural should cover a wall area of 8 feet in height and 32 feet in width. Materials: The mural should be constructed using durable, high-quality materials suitable for a public exhibit. The mural should depict detailed and accurate representations of various ISRO launch vehicles. The design should be in a white color scheme to serve as a suitable backdrop for the projection. Projection and Illumination: High-quality 4K multiple projectors should be used to project images and videos onto the mural. The projection system should include hardware and software for mapping and syncing the visuals to the mural accurately. The projection setup should provide bright, clear images with true-to-life colors. Software and Sound Integration: Custom software should be developed or integrated to sync and map the projection graphics onto the mural, providing a dynamic and immersive visual experience. The software should include features to simulate a lift-off visual effect, complete with motion graphics and realistic sound effects. High-quality audio equipment should be installed to deliver synchronized sound effects, enhancing the immersive experience. Installation: The mural must be securely mounted on the wall to ensure stability and saf ety. The projectors and audio equipment should be installed in a manner that ensures optimal projection and sound quality. (Representative Image)	1	Per Unit	Rs …….
B3	**Statue of Vikram Sarabhai**	This bust of Dr. Vikram Sarabhai is intended to honor the renowned space scientisit, providing an inspiring and educational focal point within the museum. All aspects of the statue, from materials to craftsmanship, must reflect the significance and respect due to this historical figure. The bust should be of life-size proportions to accurately represent Dr. Vikram Sarabhai. Materials: The statue should be crafted from high-quality materials, such as resin / fiberglass with a super white finish to ensure durability and an elegant appearance. Design Features: The bust should be a realistic and accurate representation of Dr. Vikram Sarabhai, reflecting his historical and cultural significance. The super white finish should be smooth, uniform, and free from imperfections, providing a pristine and visually appealing look. The statue should be mounted on a sturdy base and should be visible at	1	Per Unit	Rs …….

		eye level. (Representative Image)			
B4	**Coffee with Dr. APJ Abdul Kalam**	This "Coffee with Dr. APJ Abdul Kalam" exhibit is intended to honor and celebrate the life and achievements of one of India's most respected scientists and ex-President of INDIA. It should provide an inspiring and educational experience for museum visitors, enabling them to learn from and connect with Dr. Kalam's legacy. Dimensions and Layout: The exhibit space should be designed to comfortably accommodate multiple visitors simultaneously, with an area for seating and interactive elements. Approximate dimensions of the exhibit space should be 12 feet by 12 feet. Materials: High-quality, durable materials should be used to ensure longevity and ease of maintenance. Suitable materials include: Wooden or metal framework for structural components. Acrylic, glass, or polycarbonate for display panels. High-quality upholstery for seating areas. Design Features: The exhibit should include life-sized statue of Dr. APJ Abdul Kalam to create a realistic and immersive experience. Comfortable seating arranged in a café-like setting, with tables and chairs that allow visitors to sit and interact with the exhibit. Theming elements such as posters, photographs, and memorabilia related to Dr. Kalam's life and achievements should be included to enhance the ambiance. Interactive Elements: Screen displays or QR codes should be integrated to provide multimedia content, including videos, interviews, and speeches of Dr. APJ Abdul Kalam. Ambient lighting to create an inviting and visually appealing atmosphere. (Reprentative Image)	1	Per Unit	Rs …….

B5	**Geostationary satellite**	This Geostationary Satellite exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the technology and importance of geostationary satellites in modern life. Dimensions: The overall size of the exhibit should be 5 feet by 5 feet to allow sufficient space for detailed displays.The Earth sphere should be a minimum of 12 inches in diameter to ensure clear visibility. Materials: High-quality, durable materials should be used to ensure longevity and ease of maintenance. Suitable materials include: Acrylic, fiberglass, or polycarbonate for the Earth sphere. Metal, high-grade plastic, or resin for the satellite model. Wood or metal for the structural framework and base. Design Features: The exhibit should feature a detailed and accurate model of a geostationary satellite positioned relative to the Earth sphere. The satellite model should include solar panels, antennas, and other key components to provide an educational representation of geostationary satellites. Information about geostationary satellites, their orbits, and their applications. Use of spotlights or LED lights to highlight the satellite and Earth sphere, enhancing visibility and engagement. The exhibit must be securely installed to ensure stability and safety. All electrical components and wiring should be safely and neatly integrated within the structure. (Representative Image)	1	Per Unit	Rs …….

B6	**Polar Satellite**	This Polar Satellite Exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the technology and significance of polar satellites in Earth observation and scientific research. Dimensions: The overall size of the exhibit should be 4 feet by 4 feet to provide an ample display area. The Earth sphere should be a minimum of 12 inches in diameter. Materials: High-quality, durable materials should be used to ensure longevity and ease of maintenance. Suitable materials include: Acrylic or polycarbonate for transparent elements. Resin or high-grade plastic for detailed satellite components. Wood or metal for structural elements and the base. The Earth sphere should be made from durable fiberglass or resin and painted with high-quality, UV-resistant colors to depict continents, oceans, and polar regions. Design Features: The exhibit should include a detailed and accurate model of a polar satellite, with components such as solar panels, antennas, and sensors. The satellite should be positioned in an orbit around the Earth sphere, with a clear depiction of its polar orbit path. The base of the exhibit should include descriptive panels providing information about polar satellites, their missions, and their significance. Informative panels should be integrated to provide detailed information about the satellite's functions, missions, and the science behind polar orbits. The interactive elements should be designed to be user-friendly and educational, catering to a diverse audience. (Representative Image)	1	Per Unit	Rs …….

B7	**Hanging Indian Sattelites**	This "Indian Satellites" hanging exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing India's significant achievements in space technology. Overall Design: The exhibit should include multiple satellite models, each representing significant milestones in India's space program. The satellites should be suspended from the ceiling at varying heights to create a dynamic and engaging display. Each satellite should be accompanied by an informational plaque or display providing details about its mission and significance. Structure and Materials: Frame: Lightweight but sturdy materials such as aluminum or carbon fiber for the satellite frames. Exterior: Durable materials such as high-quality plastic or fiberglass, with UV-resistant paint for the satellite bodies. Mounting System: Secure and adjustable suspension system, including high-strength cables and ceiling mounts, to ensure the safe and stable hanging of the models. Satellite Models: a. Aryabhata: Scale: 1:10 Size: Approximately 1.5 feet x 1.5 feet Details: Accurate representation of India's first satellite, including its hexagonal shape and solar panels. b. INSAT Series (e.g., INSAT-3D): Scale: 1:20 Size: Approximately 2 feet x 1.5 feet Details: Detailed model of a weather and communication satellite from the INSAT series, including antennas and solar arrays. c. GSAT Series (e.g., GSAT-11): Scale: 1:25 Size: Approximately 2.5 feet x 2 feet Details: Representation of a high-throughput communication satellite, highlighting its large solar panels and transponders. d. Mars Orbiter Mission (Mangalyaan): Scale: 1:15 Size: Approximately 2 feet x 2 feet Details: Model of the Mars Orbiter Mission spacecraft, featuring its dish antenna and scientific instruments. e. Chandrayaan-2: Scale: 1:20 Size: Approximately 2 feet x 1.5 feet Details: Accurate model of the lunar mission orbiter, including its solar panels and scientific payloads. f. NAVIC Satellite: Scale: 1:15 Size: Approximately 2 feet x 1.5 feet Details: Representation of a satellite from India's regional navigation satellite system, featuring its compact design and antennas. Lighting: Spotlights: Adjustable spotlights mounted on the ceiling to highlight each satellite model. Use LED lights for energy efficiency and longevity. Ambient Lighting: Soft, diffused lighting to enhance the overall visual appeal of the exhibit. Installation: Mounting System: Secure and reliable ceiling mounts and suspension cables to safely hang the satellite models at varying heights. (Representative Image)	1	Per Unit	Rs …….

B8	**Applications of satellites in our day today life info panel**	This wall informative backlit panel on "Applications of Satellites in Our Day-to-Day Life" is intended to provide an educational and visually captivating experience for museum visitors. It should effectively communicate the significance of satellites in modern life, enhancing the understanding and appreciation of space technology's impact on everyday activities. Dimensions: The panel should cover a wall area of approximately 6 feet in height and 12 feet in width. Materials: High-quality, durable materials suitable for a public exhibit. Recommended materials include: Backlit panels for the main display. Aluminum or steel framing for structural support. High-resolution, UV-resistant printing for all graphics and text to ensure clarity and longevity. Design Features: The panel should be visually engaging and easy to read, with a clear and organized layout. Use of vibrant colors and high-quality images to illustrate the various applications of satellites. Sections should include headings, subheadings, and bullet points to break down information and enhance readability. Content: The panel should cover a range of satellite applications, including: Communication (e.g., television, internet, mobile phones), Navigation (e.g., GPS systems), Weather forecasting, Earth observation (e.g., environmental monitoring, disaster management), Scientific research. Each application should be explained with concise text and supported by relevant images or diagrams. Integrated LED backlighting to ensure the panel is evenly illuminated and easy to read in various lighting conditions. The backlighting system should be energy-efficient and designed for long-term use. (Representative Image)	1	Per Unit	Rs …….

C1	**Life Cycle of Stars**	This "Life Cycle of Stars" backlit panel exhibit is intended to provide an informative and visually captivating experience for museum visitors, enhancing their understanding of stellar evolution. Dimensions: The panel should fit the designated exhibit space, with approximate dimensions of 6 feet in height and 4 feet in width (adjustable based on available space). Materials: The backlit panel should be constructed using high-quality, durable materials to ensure longevity and ease of maintenance. Metal for the frame and structural support. UV-resistant inks and finishes for graphics and text to prevent fading. Design Features: The panel should clearly illustrate the various stages in the life cycle of stars, including: Stellar formation (Nebula), Protostar, Main Sequence Star, Red Giant or Supergiant, Supernova or Planetary Nebula, White Dwarf, Neutron Star, or Black Hole, Use of high-resolution graphics, diagrams, and descriptive text to explain each stage in a visually engaging manner. (Representative Image)	1	Per Unit	Rs …….
C2	**Hanging Planets**	This Hanging Solar System exhibit is intended to provide an educational and visually captivating experience for museum visitors, showcasing the relative sizes and positions of the Solar System's celestial bodies. The display should be proportionate, with planet sizes and distances scaled accurately to reflect their relative sizes and positions. Materials: High-quality, durable materials should be used to ensure longevity and safety. Suitable materials include: Lightweight, durable fiberglass or resin for the planets and sun. Strong, transparent nylon or stainless steel cables for suspension. Metal or sturdy plastic for the supporting framework. Design Features: The exhibit should include accurately sized and colored representations of the Sun and all eight planets, as well as dwarf planets and other significant Solar System bodies. Each planet should be suspended at a proportionate distance from the Sun and should hang at varying heights to create a three-dimensional effect. The Sun should be centrally located with the planets arranged around it in their respective orbits. Fabrication: Precise craftsmanship to ensure accurate and detailed representations of each celestial body. Smooth and even paint finishes with appropriate colors to represent the Sun and each planet realistically. Lightweight materials should be used to ensure safety and ease of installation while maintaining durability. Installation: The exhibit must be securely suspended	1	Per Unit	Rs …….

		from the ceiling using strong and reliable mounting hardware. The suspension system should be designed to ensure stability and prevent any movement or swaying. (Representative Image)			

C3	**Plantes on Wall Projected**	This "Solar System Projected on Wall" exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the wonders of our Solar System with dynamic visuals and immersive multimedia. Dimensions: The exhibit will cover a wall area of 8 feet in height and 40 feet in width. Materials: Fiber Glass Spheres: High-quality fiber glass spheres representing the planets and the sun, accurately scaled and colored. These should be durable and lightweight, with a smooth finish for optimal projection. Mounting Materials: Strong adhesives or mounting hardware to securely attach the spheres to the wall. Design Features: Fiber Glass Spheres: Half spheres of varying sizes to represent the planets and the sun, accurately scaled. These spheres should be securely mounted on the wall, with precise placement to reflect the relative positions and sizes of the celestial bodies in the Solar System. Projection Surface: The wall should be prepared with a smooth, matte finish to optimize the quality of the projected images. Projection and Multimedia: Projectors: High-quality 4K projectors should be used to display detailed and vivid videos of the Solar System. The projection system should cover the entire 8' x 40' wall area. Mapping and Syncing Software: Custom software to map and sync the projections onto the wall and fiber glass spheres. The software should be capable of providing seamless transitions and interactive features to enhance the immersive experience. Video Content: Captivating and educational videos showcasing the Solar System, including planetary motion, detailed views of each planet and the sun. The content should be designed to loop seamlessly and provide continuous engagement. Audio Integration: Sound System: High-quality audio equipment to provide synchronized sound effects and background music, enhancing the overall experience. The sound system should be integrated discreetly within the exhibit area to maintain visual aesthetics. (Representative Image)	1	Per Unit	Rs …….

C4	**Weight on different planets**	This "Weight on Planet" exhibit is intended to provide an engaging and educational experience for museum visitors, illustrating the variations in gravitational forces across different celestial bodies. Dimensions: Each exhibit should consist of a 5 feet x 5 feet circular platform. Materials: Platform Surface: The platform should be made of durable, high-quality materials such as reinforced acrylic or laminated plywood, capable of supporting continuous visitor interaction. Surface Design: The surface should be designed to resemble the specific planet or the Sun, using textured and colored finishes to accurately depict the terrain and environment. Weighing Scale: Integration: A digital weighing scale should be integrated into the platform, capable of accurately measuring the visitor's weight. Customization: The scale should be programmed to display the visitor's weight adjusted for the gravity of the specific planet or the Sun. This requires pre-programming the gravity factors for each celestial body. Integration: Each platform should feature a display screen that shows the visitor's weight on the specific planet or Sun, based on the measurement from the weighing scale. User Interface: The display should be clear and easy to read, providing instant feedback to the visitor. Design Features: Planet Surface: The platform design should accurately represent the surface of the planet or Sun, using durable and visually appealing materials. Educational Content: Informational panels or digital displays should be included to provide visitors with additional details about the planet or Sun, including facts about its gravity, atmosphere, and other relevant characteristics. Installation: Stability and Safety: The platforms must be securely installed to ensure stability and safety for visitors. Electrical Integration: Safely integrate all electrical components, including the weighing scale and display screen, ensuring neat and concealed wiring. (Representative Image)	1	Per Unit	Rs …….
D1	**12 meter Dome Planetarium 120 Seater**	12 meter Dia 2D Planetarium. Fully High Resolution Full dome digital 2D immersive projection system (as per below details)	1	Per Unit	Rs …….

DETAILED SPECIFICATION OF 'D1'

D1	**12 meter Dia 2D Planetarium. Fully High Resolution Full dome digital 2D immersive projection system**	
	The integrated High Resolution Full dome Digital 2D Immersive Projection System consists of Projectors array, perforated dome screen, Blending & Geometric Correction units, Image Generator Servers & GUI server for playback, astronomy & playback simulation software, show control, Server for dome slicing and content creation for full dome planetarium shows, Display Management, Alignment & Calibration System, UPS system, 5.1 surround sound system etc. This system is a multi-channel display system with combined resolution of 8.2 Million Pixels without blending. The specifications of the complete system are provided in section 1 to 10 below.	
1	**1. Projector Array** **Immersive 2D Projection System:**	
	An array of two (2) projectors and allied systems with the requisite overlap and auto edge blending is to be provided along with suitable auto geometry correction for the dome screen as specified, to provide a seamless display of at least 8.2 MP arranged in a front projection configuration with the specifications as per table below. The projectors are to be mounted on a suitable structure. Selected bidder will give design and customer will fabricate and install the projector mounting structure at site as per the design, details, drawings and specifications provided by the bidder. The bidder must visit the site before submission of tender and identify the most suitable place in the building for keeping the Image Generators/Server, projectors, Audio racks, and other necessary units and routing of the cables needed to connect all constituent components of the system.	
	Specifications	**Detailed description**
	Number of Projectors	Two (2) projectors to be supplied for achieving industry 2D systems. Please specify make and model of the projector proposed to be used in the projector array. NB: All Projectors must be of same specifications and from same OEM and shall directly project contents on the dome screen. Acceptable OEMs: BARCO/Christie/ JVC / NEC /Digital Projection/ Panasonic/Sony or equivalent
	Type of projector	Projection Technology should be DLP or LCOS or similar technology, with minimum brightness of 10,000 ANSI Lumens .
	Projector array comprising multiple projectors	To cover 12 meter diameter Horizontal dome screen .
	Total Resolution before and after blending	Minimum 8.2 MP (before blending) and minimum 4.5 MP (after blending)
	Other major features	• Projectors must have the capacity to project Stereoscopic Active 3D for future upgradation
	Mounting	Projectors are to be mounted on the specially designed structure around the dome periphery. Each mount/cradle shall provide full optical alignment and calibration support along each of the X, Y and Z axes as well as rotation about the horizontal axis.
	Digital Video Projector	
	The specifications of individual projector are provided at table: The projector model quoted by the bidder must be capable of running continuously for at least 12 hours a day and 364 days a year. All projectors must be of same specifications and manufactured by the same OEM in their own factory. Acceptable OEMs: BARCO/Christie/ JVC/ Digital Projection/ NEC /Panasonic/Sony	
	Specifications	**Detailed description**
	Display Technology	DLP or LCOS or similar technology Light Source : Laser Phosphor or equivalent
	Minimum native Resolution,	Native 2560 x1600, 120 Hz and 10,000 ANSI Lumens.

	Brightness	Display resolutions 4K-UHD (3840 x 2160) or Higher
	Internal Input / Output ports	HDSDI, 2x DP 1.2, 2x dual link DVI-D, HD BaseT, HDMI2.0 (HDCP2.2, HDR10), RJ 45 Ethernet, DMX in/out, RS232 in, 2x USB, 12v out
	Input/Output Control and networking	RS232, TCP/IP.
	Lens Options	Standard Zoom to Wide Angle Zoom to cover the entire screen area as specified (please specify further technical details along with type and OEM of lenses to be used).
	Calibration	Support for controlling individual colour and intensity on each colour channel.
	Source Life	Minimum 20000 hrs
	Operating Hours	The System shall be capable of being used for twelve hours per day 364 days in a year.
	Monitoring Parameters	Source life, Fan status, Temperature status, etc.
	Noise	< 40 db at 25°C per projector
	Accessories	All standard accessories including IR remote, Line cord etc.
	Warranty	Manufacturer's standard warranty of not less than 3 years on projectors.
2	**2. Image Generator Server (computer System) and Playback System**	
	Digital Planetarium System must have Professional quality servers / Image generators/ graphic computers/cluster (Computer System) mounted on rack capable of handling planetarium shows and high resolution full dome video shows. This Computer System with the quantity (2+1) total 03 i.e. 01 server for each projectors, 01 server as host cum audio must be with the full dome and planetarium show software. A suitable solution shall be ensured to drive the required projector array with the specifications given below. The Image GUI server shall provide synchronization between images projected onto the dome through various image generator servers for a seamless image without any tearing. The server shall also provide synchronization of multilingual audio tracks with the projected film shows. Acceptable OEMs: Dell, HP,LENOVO or equivalent	
	Specifications	**Detailed description**
	Image Generators Computer system	Digital Planetarium System must have Professional quality graphic computers/cluster mounted on rack capable of handling planetarium shows and high resolution full dome video shows from Dell/Lenovo/ HP or equivalent with minimum specifications of:
		• Processor: Quad Core Intel Xenon Processor or higher
		• Working Memory: 4GB x 2 RAM or higher
		• Graphics: Duel Port ATI / NVidia or equivalent Graphic Card. The Video Card must have the video frame buffers that must store and synchronize the video frames so that the same frames are always output at the same time.
		• Optical Drive: 8X DVD ROM
		• Storage: Two (2) no of Swappable 1TB HDD
		• Network Ports: Minimum Four (4) Network Ports
		• Operating system: Microsoft Windows 10 or newer
		• Sound: Integrated 5.1 sound system
		Other Accessories: Backlit Key Board & Mouse (1), Joystick (1), cables & Connector Set
	Pre process Data transfer Rate	No Jerks, flicker or image tearing should appear on screen.
3	**3. Astronomy Simulation & 2D Playback Software:**	• Latest version of the reputed OEM astronomy and 2D playback software with perpetual license for playback of full dome shows and planetarium shows and with facility to convert large format shows

		into full dome shows.
		• Digital library/Cloud access of the planetarium datasets for development of in-house planetarium shows.
		• The Astronomy Simulation & Playback Software must have built in Back Up feature. It should be possible to take a backup of all hard drives.
		• Interactive Astronomy Simulation tool & Datasets:
	The Digital Planetarium Software must have following features:	
	Specifications	**Detailed description**
	Interactive Planetarium Software	The interactive Planetarium software should consist of following standard & special features (More features are preferable):
		• The planetarium software must support JavaScript ECMA scripting language.
		• The planetarium software must allow KML Support –Keyhole Mark up Language files to be downloaded from the Internet and used to demonstrate a wide range of scientific concepts.
		• The system should allow full Python or Java script integration for advanced real-time capabilities.
		• Earth & Moon System Features: High Resolution Earth & Moon Map, moons of Planets as per selected options.
		• Shadow to represent eclipses, Earth orbiting
		Satellites for Navigation and mapping, etc.
		• Constellations & Grids : 88 constellations, Stick figures, possibility to add arbitrary art overlays, IAU boundaries for J2000, Co- ordinate spheres for celestial, ecliptic and galactic systems, Meridian, Equator, Cardinal Points.
		• Solar System: Sun, Planets including their Moons, Minor Orbital Objects including Asteroids, Outer Solar System Objects, comets, OortCloud, Kuiper belt etc.
		• Space Missions: Cassini, Voyager & Voyager2, latest Mars missions, Pioneer, International Space Stations, important Indian Spacecraft and space missions including 3D simulations are also to be added.
		• Milky way Galaxy: Hipparchus Star Catalog,
		• Extra solar Planets, Open Star Clusters, Globular Star Clusters, Pulsars, Quasars, Planetary Nebulae, H II Regions, Supernova Remnants etc.
		• Extragalactic Space: Tully Galaxies (NGC, JC, 30,000 objects), 110 Messier Objects, Abell Galaxy Cluster, Deep Field Survey Objects, Sloan Digital Sky survey (SDSS).
		• Provision for viewing the Earth, Solar system & Milkyway galaxy from far away points.
		• More such features like simulations of the milkyway, the cosmic web... etc., as seen from different locations in space.
		• The supplier has to furnish the list of software systems that will be supplied. Digital planetarium system software should be owned, developed and fully maintained by the digital planetarium system supplier.

	Provision of multiple usages of show	The show manager should be capable of using full dome 2D / 3D digital shows by different developers around the world.
		• The system should be compatible (video & audio) for the full dome shows either converted from large format films into digital or the digitally created with live shoots (not animation). All details in this regard are to be provided.
	All System Navigation System	Supported navigation devices: Mouse/Ipad, Wireless Xbox, Keyboard, and Voice Control with the following or more features.
		• Scale Graph
		• Flight Assist for smooth acceleration & inertia
		• HALO Surface Feature
		• Volumetric Software
		• Show Modules
		• Resource material to teach basic astronomy
		• Point Cloud Renderer
		• Mesh Renderer
		• Implemented Object Positions
		• Laser pointer and more features
	Show Elements	The following minimum elements need to be provided for creating in house shows. Also wrap up software need to be supplied for creating full dome shows in 2D.
		• System must include the American Museum of Natural History Digital Universe data base. No other substitute database acceptable.
		• The System must be able to display a volumetric Milky Way Galaxy in real-time.
		• Full dome videos
		• Full dome Clips
		• Audio clips
		• Real movie strips
		• Text Labels and Text Boxes which can be added in live shows in both English and Hindi.
		• Self-defined lines, grids, scales
		• Stars and sky motions
		• Sun, Moon & Planets
		• The system must allow the user to view the sky at any date/time from the surface of any solar system body, with correct local diurnal motion, where data is available.
		• Astronomy Picture of the Day by NASA should be capable of full integration into the system through one single click download during the live shows.
		• Library of images, clippings, visuals, animation on space and astronomy related objects and events. Images of ancient astronomers and their works and contributions.
		• Software compatible to the supplied system to create shows should be licensed.
		• There should be provision for on line updating.
		• The text editor to create show elements should be capable of handling English and Hindi.
		• Still images (regular images, panoramas, all- skies)

	Show Manager	System Should be capable of integrating user created artwork, videos, photos, sounds etc. With the aid of a time line, any number of levels, tracks, layers. Chapters and animation parameters, still images, the system should be compatible of rendering images on the full dome. All elements should be loaded form the centralized data server into the resources window and previewed without any heavy rendering process, stitching, slicing etc. All required software with license are to be supplied. Provision for projecting 4K shows in 2D.
		• Show Manager must include a live real-time view of the dome on the computer monitor.
		• The show manager software should ideally be able to control audio, lights etc inside the theatre to create special effects for custom shows and live shows.
		• The pre-rendered video and real-time graphics inputs must be playable simultaneously and not mutually exclusive.
		• They must be played through the same astronomy software.
		• The System must be capable of using the
		drag and drop facility to include images, 3D models, videos or audio files into the Show Manager, without need to write any programming scripts. Dome View should immediately display these actions.
		• The show Manager must provide the ability to obtain content from an Internet library that is available to other sites.
		• The show manager must be translatable to local languages without the need for recreating it. The translation includes all system errors, warnings, messages, etc. Changing languages should be possible within the user interface.
	Show Player	The tool for reproduction and control of shows, image distribution to the various channels, distortion correction, brightness and gamma adaptation as well as diaphragm calculations should be effective in real time, without prior slicing of raw images/customized ones in the software.
		• Interference with a running show through the familiar control commands (Play, Pause, stop etc) should be available in the User Interface, Jump to predefined bookmarks chapters or layers should be made available in the Player or Show Editor. By means of a time pointer, moving to any point of time within a show and enable projection.
		• Player must support general commands, such as controlling the dome illumination cove lights and configuring the projector.
		• All the Player functions should be loaded onto a PDA/I PAD or other new technology devices, which can then be used to wireless remote control pre compiled shows as an alternative to the computer control. And
		• MPEG encoder must be supplied with the system to enable the user to recode raw images or customised ones in the software to be converted in to full dome videos compatible to the system. Capable of projecting shows of 4K and 8K both in 2D / 3D.
	Flexibility to accept different shows made in different softwares.	The system should be capable of playing all types of shows – full dome video shows including large format film digitally converted shows and 2D movies in the dome.
		• The system software must support generic real-time volume rendering and include astronomical and non-astronomical volume sample data.

	Library of Images/ Full dome Clips.	A library of Full dome Clips and images in 4K 2D, mainly related to major astronomical events and objects along with their resolution, future up gradation option should be provided. Details of the Library have to be provided with offer for evaluation.
	Library for Audio Clippings	A list of audio clippings, 5.1 along with duration and format need to be furnished. The above clippings are required for adding background music when in house shows are produced
4	**4. Show Control System**	**The display environment should include an integrated Show Control System, capable of controlling all hardware, other equipment, including the display system, audio, media, cove, lighting system, exit and emergency exit signage lighting. The Show Control System should provide following features:**
	Detailed description	
	• Interactive screen PROJECTION SYSTEM for controlling DIGITAL IMMERSIVE FULLDOME	
	The screen should have following: Display size: 32 inch (diagonal), Display Resolution: Upto 1920X1080 or better	
5	**5. Auto Blending and Auto Geometry Correction (BG) unit:**	
	The solution shall be provided using projectors with physical mask and extra hardware/ software or using projectors with embedded hardware/ software. The specifications and functionalities of this unit are as below:	
	Specifications	**Detailed description**
	Input / Output	DVI in/out
	Image Operations	Auto Geometry Correction
		Auto Edge Blending
		Auto Colour Correction and Matching
		Auto Uniformity Correction and Matching
		Software for geometric correction shall be incorporated in the system.
		The system must have software and hardware to adjust and calibre the geometric auto alignment, auto brightness uniformity and auto edge blending of the digital projection system automatically and must be integrated into the show manager software.
6	**6. Integrated Surround Sound Audio System**	
	A 5.1 surround audio system of JBL, BOSE, AKG, Phonic, Studiomaster, Wharfedale or equivalent brand shall be an integrated part of the overall system. It shall be fully controlled under the Show Control System as per table and needs to be supplied and installed and it shall address the requirements of fulldome projection environment to ensure maximum immersive experience. The system shall also provide public address system inside the theatre.	
	Specification	**Detailed description**
	5.1 channel surround audio system	The sound system is to be optimized for a 12 meter dome. The system must be supplied with fixed cables, connectors, appropriate accessories etc to operate it without any hassles.
	Front Left/Front Right/Centre Speaker/ Surround Speakers	Speakers (80W per channel) – Qty 05 Speaker size should not be less than 8". (Make Wharfedale / JBL/ Studiomaster or equivalent)
	Subwoofer :	Speakers (150W per channel) – Qty 01 Speaker size should not be less than 10". (Make Wharfedale / JBL/ Studiomaster or equivalent)
	Power Amplifiers for Speakers: Centre/Front/Surround	Must be compatible with Speakers
	Power Amplifiers for	Must be compatible with Subwoofer

	Subwoofer	
	Audio Mixer , Processor, Equalizer, crossover, Microphone and other accessories	• 8 Channel Audio Mixer with USB playback facility - Qty 01 (Make : NX Audio,Phonic,Soundcraft or equivalent)
		• 8x8 Matrix Switcher cum Processor with gain control, frequency adjustment, time delay facility for both input & output end – Qty 01(Make: Technica / Ashley or equivalent)
		• 31 Band per Channel Stereo Equalizer – Qty 01(Make DBX or equivalent)
		• Crossover Network for Woofer – Qty 01.
		• (Make : DBX or equivalent)
		• Wired Podium Microphone – Qty 01(Make : JTS or equivalent)
		• Hand Held UHF wireless Microphone – Qty 02(Make : Studiomaster or equivalent) Audio Rack
7	**7. Digital Planetarium Shows / Full Dome Films**	
	7.1 One Licensed digital 4K 2D fulldome film (Film title : Voyager: The Never-Ending Journey or Similar content) show in English, Hindi and Marathi for duration of about 20-30 minutes for 3 years is to be supplied, encoded and tested for satisfactory projection.	
	7.2 The selected bidder shall provide at least 8 free 2D full dome Planetarium as well as Astronomy Sky Shows available in-house or from international producers like NASA/ESO/ESA etc. in English and Bengali. The agency will also provide Marathi version of the shows with voice over. Note:	
	i. Necessary scripts and original sound tracks in digital format must be supplied.	
	ii. The shows should be of around 15-35 minutes duration.	
	iii. The selected vendors should provide list of all latest available shows with preview.	
	Each show must be minimum of 20 - 30 minutes duration. All full dome shows must be in 5. 1 digital surround sound formats. All shows must be supplied in Hindi, English and Marathi Languages. This system should be capable of playing all types of shows – full dome video shows, including large format film digitally converted shows and 2D movies in the dome	
8	**8. Projection Dome:**	
	Horizontal Inner projection FRP dome must be of 12 meter diameter with the following specifications	
	• FRP Thickness: 3-6 mm.	
	• FRP Color: Smooth matt White finished from both the sides	
	• Fiberglass content: More than 35%.	
	• Resin used: Clear Orthopthalic U. V. Stabilized Resin.	
	• Modular self-supporting FRP dome / MS Frame Dome	
	• Diameter of Dome: 12 m	
	• Centre height: 6 m	
	• Modular sections: 24 or as per vendors design (To be fixed on the Dome ring and support.)	
9	**9. Seating Chairs (120 seating Capacity)**	

	• Manual Tip up Pushback reclining chair with minimum size ctc distance of 22". • ABS melded housing for back cushions & for seat is Metal Embossed shell, All sheet metal parts with powder coated. Arm rest in Polyurethane injection moulded. Seat numbering on back shell with silicon protective layer with thin stickers. • Row number for seat along the aisles. Provision for LED lights on sides along with aisles with the row and the seat numbers display. • For Noise Reduction MoS2 components on Roller part. • Frames 18 mm thick high-pressure steam pressed hard plywood for seat and the back out of which the back is of 14mm the bent ply. • Spring for push back mechanism IS grade III. • Metal stand to be 300 x 300 x 3 mm duly bent in 1piece supported by 3 structures 20 x 40 x 270 mm each approx. • Block to be 2 triangular blocks duly embossed-300 x 300 mm of 2mm with 4 of 9mm holes. • Longitudinal tubes of size 40 x 20 x 490 mm-with 2 tubes each and 4 longitudinal Flat of size 25 x 6 mm duly bent in shape to shape Riveted/Welded & approximately 330 & 350mm long. • Seat Bracket Interconnected/Riveted/Welded and Back Bracket to be 200 x 90 x 2 mm, and connected to embossed plate having 4 slot to mount the seat. • Seat Bracket to have stopper cup with rivets and approximately 170 x 200 x 3 mm -2 pairs for back having 2 holes in each ro mount the back. • All rivets to be with nylon washers and pneumatic machine only. Rollers to withstand temperatures up to 200 and of sizes 22 mm width & 38 mm Dia, duly riveted and welded supported by metal sheet of size 30 mm x 120 mm x 2mm-1 pair. • All stopper material to be reinforced by nylon tubes of size 30 mm. • Pushback movement to be supported by spring. • Seat is supported by additional Embossed Metal sheet	
10	**10. U.P.S. System**	
	A minimum 20 KVA online ph3-ph3 UPS system with isolation transformer, reputed make and having backup time of 30 minutes to be provided by the bidder for digital immersive full dome 2D projection system as per table 1.7 given below.	
	Specifications	**Detailed description**
	U.P.S. system (True IGBT with 30 minutes backup time and including isolation transformer of reputed brand: APC, Emersion, Numeric, Veritv or Schneider	Please provide specifications of the U.P.S. system including make and model.
	Battery bank with suitable rack	Please specify number of SMF batteries with detailed specifications. All batteries supplied must be from same batch of production.

D2	**Projection on dome from outside**	This "Projection on 12 Meter half Dome from Outside" exhibit is intended to provide an immersive and visually stunning experience for visitors, utilizing state-of-the-art projection technology and software. Dimensions: Dome Size: 12 meters in diameter hemisphere. Projectors: Quantity: Sufficient number of projectors to ensure full coverage of the 12-meter hemisphere without any distortion or gaps. Resolution: Minimum 4K resolution for each projector to ensure high-quality, detailed images. Brightness: Minimum of 10,000 lumens per projector to ensure visibility in various lighting conditions. Mounting and Alignment: Mounting System: Robust and adjustable mounting system to securely position and align the projectors. Alignment: Precision alignment tools to ensure seamless image blending and accurate projection mapping. Software: Mapping Software: Advanced projection mapping software capable of handling complex geometries and providing accurate distortion correction. Syncing Software: Software to synchronize multiple projectors, ensuring smooth transitions and a cohesive visual experience. Content Management: Software for easy uploading, scheduling, and managing of multimedia content. Centralized Control: A centralized control system to manage all projectors and software, ensuring easy operation and monitoring. (Representative Image)	1	Per Unit	Rs …….

	India On Moon	This "Chandrayaan-3 on Moon" exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the achievements of the Chandrayaan-3 mission and the exploration of the moon. Dimensions: Overall size of the exhibit: 10 feet in width and 30 feet in length. Moon Surface: Materials: High-quality, durable materials such as reinforced fiberglass, textured foam, or resin or similar material to create a realistic representation of the moon's surface. Design: The surface should accurately depict the lunar terrain, including craters, rocks, and dust. The texture and color should be realistic, with a grey, rocky appearance. Chandrayaan-3 Models: Lander: Scale: A scaled model of the Chandrayaan-3 lander, accurately representing the design and dimensions of the actual lander. Materials: Durable materials such as high-grade plastic, acrylic, resin, or metal to ensure longevity and detailed craftsmanship. Details: Include accurate details such as antennas, solar panels, and landing legs. Rover: Scale: A scaled model of the Chandrayaan-3 rover, accurately representing the design and dimensions of the actual rover. Materials: Durable materials such as high-grade plastic, acrylic, resin, or metal to ensure longevity and detailed craftsmanship. Details: Include accurate details such as wheels, cameras, and instruments. Design Features: Lighting: Strategic lighting to highlight the lander and rover, creating shadows and depth to enhance realism. Use LED lights for energy efficiency and longevity. Educational Panels: Informational panels providing context about Chandrayaan-3, its mission objectives, and the significance of its findings. Installation: Base Structure: A sturdy base structure to support the entire exhibit, ensuring stability and safety for visitors. Mounting: Securely mount the lander and rover models on the lunar surface, ensuring they are stable and accurately positioned. Accessibility: Ensure the exhibit is accessible to all visitors, including those with disabilities. Provide clear pathways around the exhibit. (Representative Image)	1	Per Unit	Rs …….

	Destination Mars	This "Destination Mars" gallery is intended to provide an engaging and educational experience for museum visitors, showcasing the wonders of Mars exploration and the potential for future colonization. Dimensions: Overall size of the gallery: 10 feet in width and 30 feet in length. Martian Surface: Materials: High-quality, durable materials such as reinforced fiberglass, textured foam, or resin to create a realistic representation of the Martian surface. Design: The surface should accurately depict the Martian terrain, including rocks, sand dunes, and craters. The texture and color should be realistic, with a reddish-brown, rocky appearance. Possible Exhibits: a. Mars Rover Model: A scaled model of a Mars rover, such as the Perseverance rover. Details: Include accurate details such as wheels, cameras, instruments, and robotic arms. b. Mars Habitat Module: Scale: A model or mock-up of a potential Mars habitat module. Materials: Durable materials such as high-grade plastic, resin, or metal to ensure longevity and detailed craftsmanship. Mars Colonization Timeline: Design: A chronological timeline display showcasing key milestones in Mars exploration and future colonization plans. Informational Panels: Panels providing detailed information about each milestone, including past missions, current projects, and future goals. Lighting: LED Lighting: Strategic lighting to highlight key exhibits and create an immersive atmosphere. Use energy-efficient LED lights with adjustable color and intensity to simulate the Martian environment. Accent Lighting: Spotlights on key features such as the rover model, habitat module, and geological samples to draw visitor attention. Informational Panels: Well-designed panels providing detailed information about Mars, its environment, and the significance of exploration missions. Gallery should also highlight India's Mars missions. (Representative Image)	1	Per Unit	Rs …….

G	**Life In ISS**	This "Life in ISS" gallery is intended to provide an engaging and educational experience for museum visitors, showcasing the unique challenges and daily routines of astronauts living and working on the International Space Station. Dimensions: Overall size of the model: 10 feet in width, 10 feet in height, and 30 feet in length. Structure and Materials: Frame: Sturdy metal or aluminum frame to support the structure. Walls and Floors: High-quality, durable materials such as reinforced acrylic, laminated plywood, or fiberglass to create realistic interior surfaces of the ISS. Windows: Clear acrylic windows to simulate ISS viewing ports. Walkthrough Passage: Design: The passage should be designed to accurately represent the internal modules of the ISS, including corridors and various compartments.Exhibits Inside: a. Sleeping Quarters: Mock-Up: A replica of an astronaut's sleeping pod, including a sleeping bag, personal items, and storage compartments. Informational Panels: Panels describing the sleeping arrangements and how astronauts manage sleep cycles in space. b. Workstations and Research Labs: Mock-Up: Replica workstations and research lab areas with equipment such as laptops, microscopes, and scientific instruments. Interactive Displays: Touchscreens or panels showing videos and information about the scientific research conducted on the ISS. c. Exercise Equipment: Mock-Up: Models of exercise equipment used on the ISS, such as a treadmill, stationary bike, and resistance bands. Informational Panels: Descriptions of the importance of exercise for astronauts and how they maintain their health in microgravity. d. Kitchen and Dining Area: Mock-Up: Replica of the ISS kitchen area, including food storage, preparation tools, and packaged space food. Interactive Displays: Information about the types of food eaten in space, how meals are prepared, and the challenges of eating in microgravity. e. Hygiene Facilities: Mock-Up: Models of the ISS bathroom facilities, including a toilet and hygiene station. Informational Panels: Descriptions of how astronauts manage personal hygiene and waste in space. f. Control Panels and Communication Systems: Mock-Up: Replica control panels and communication systems used by astronauts to operate the ISS. Lighting: LED Lighting: Energy-efficient LED lights to create a realistic atmosphere, simulating the lighting conditions inside the ISS. Accent Lighting: Spotlights to highlight key exhibits and interactive elements. Audio-Visual Components: Projectors and Screens: High-quality projectors and screens to display videos	1	Per Unit	Rs …….

		of daily life on the ISS, including routines, experiments, and spacewalks. (Representative Image)			

H1	**Gaganyaan Capsule**	This "Gaganyaan Capsule" exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the challenges and excitement of human spaceflight. Dimensions: Overall size of the capsule: 8 feet in width, 8 feet in length, and 9 feet in height. Structure and Materials: Frame: Sturdy metal or aluminum frame to support the structure. Exterior: High-quality, durable materials such as reinforced fiberglass to create a realistic representation of the Gaganyaan capsule. Interior: Detailed interior design replicating the actual Gaganyaan capsule, using high-grade materials for seats, control panels, and walls. Seating and Motion: Seats: Two ergonomically designed seats with safety harnesses to securely accommodate visitors. Vibration and Tilt Mechanism: Integrated vibration and tilt mechanisms in the seats to simulate the physical sensations of liftoff, space travel, and re-entry. Control System: Advanced control system to synchronize seat movements with the audio-visual content for an immersive experience. Audio-Visual Components: Screen: High-resolution screen placed inside the capsule to display the AV clip of the journey. Sound System: Surround sound system to provide realistic audio effects, including liftoff, space travel, re-entry, and ocean landing sounds. Control Panels: Replica control panels with switches, buttons, and screens to mimic the actual Gaganyaan capsule. Instrument Panels: Detailed instrument panels showing simulated flight data and mission status. Lighting: Interior lighting to simulate various stages of the journey, such as liftoff, space travel, and re-entry. Windows: Simulated windows with backlit images to give the illusion of viewing space and Earth. Emergency Stop: Easily accessible emergency stop button to halt the simulation if necessary. Ventilation: Adequate ventilation inside the capsule to ensure visitor comfort. Educational Content: Informational Panels: Panels outside the capsule providing detailed information about the Gaganyaan mission, the capsule design, and the journey. Interactive Displays: QR codes or panels allowing visitors to learn more about the technology and science behind the Gaganyaan mission. (Representative Image)	1	Per Unit	Rs …….

H2	**HRLV 1:20 Scale Model**	Dimensions and Scale: The scale model of HRLV (Human-Rated Launch Vehicle) shall be precisely fabricated to a scale of 1:20, maintaining accurate proportions to the original dimensions. Materials: Primary Structure: The model shall be constructed using high-quality, lightweight, and durable materials such as reinforced fiberglass, high-density polystyrene, or equivalent, ensuring structural integrity and longevity. Surface Finish: The external surfaces shall be finished with high-grade automotive paint or equivalent, providing a smooth, polished, and durable finish. The paint used must be UV-resistant and weatherproof to prevent degradation over time. Detailing: All intricate details, including but not limited to the rocket stages, engines, fins, and other external features, shall be crafted using precision techniques such as 3D printing, CNC machining, or equivalent. Color Scheme and Markings: The model shall be painted and marked to replicate the exact color scheme, logos, insignias, and other identifiers as seen on the original HRLV. Accurate pantone colors must be used to match the original design specifications. Mounting and Display: The model shall be securely mounted on a custom-designed base or pedestal, fabricated from sturdy materials such as metal or wood, ensuring stability and safety during display. The base should include a plaque or information panel detailing the specifications and significance of the HRLV. (Representative Image)	1	Per Unit	Rs …….

H3	**Astronaut training facility backlit panel**	This "Astronaut Training Facility" backlit wall-mounted frame is intended to provide an informative and engaging overview of the rigorous training programs astronauts undergo to prepare for space missions. Dimensions: Overall size of the frame: 4 feet in width and 8 feet in height. Structure and Materials: Frame: High-quality, durable aluminum or metal frame with a sleek finish. Backlit Panel to ensure uniform illumination and visibility. Graphics: High-resolution, UV-printed graphics for long-lasting and vibrant images. Content: a. Overview of Astronaut Training: Brief introduction explaining the importance of astronaut training and the objectives of the training facility. b. Training Modules: Physical Training: Description of physical fitness programs, including cardiovascular exercises, strength training, and endurance building. Neutral Buoyancy Training: Overview of underwater training in neutral buoyancy pools to simulate microgravity and practice extravehicular activities (spacewalks). Flight Simulators: Explanation of training using flight simulators to practice spacecraft operations, docking maneuvers, and emergency procedures. Virtual Reality (VR) Training: Information on VR technology used to simulate various scenarios astronauts might encounter in space. Robotics Training: Details about the use of robotic arms and other equipment, and the training required to operate them. c. Specialized Training: Survival Training: Overview of survival training programs for different environments (desert, jungle, ocean) in case of emergency landings. Medical Training: Description of medical training, including first aid, emergency medical procedures, and dealing with space-specific health issues. Scientific Training: Information on scientific experiments and research activities astronauts are trained to conduct on the ISS or other missions. d. Images and Diagrams: Photographs: High-quality images of astronauts undergoing various training activities. Diagrams: Informative diagrams showing training equipment, facilities, and procedures. Lighting: LED Backlighting: Energy-efficient LED lights to provide even illumination across the entire panel. The lighting should be adjustable to enhance visibility and focus on key sections of the content. (Representative Image)	1	Per Unit	Rs …….

I	**Interactive wall**	This "Interactive Wall" exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the wonders of space and astronomy. Interactive display panel x 8 NO.s, screen type O-LED, Aspect ration: 16:9, size: 75 inch, Resolution: 3840x2160, Display colour:1.07B, Pixel picth: 0.4296mm x 0.4296mm, Brightness: 400cd/m2, Contrast ratio:5000:1, System: Windows10/11, Linux, MAC, Chrome, Android, Infrafed recognition- 20 points, Full speed USB, Toughened glass with Level 7 of Mohs standards, physics specs: 1707 x 1034 x 90.6 mm OR competitive interactive display panel with touch screen & interactive content facility. Content: a. Solar System Exploration b. Star Constellations c. Space Missions d. Black Holes and Galaxies, Interactive Features: Quizzes and Games: Educational quizzes and interactive games related to space and astronomy, designed for various age groups. (Representative Image)	1	Per Unit	Rs …….
J	**Space Ship 5D VR Exprience**	This "Spaceship VR 5D Experience" exhibit is intended to provide an immersive and educational journey through space, combining cutting-edge virtual reality with physical effects to create a truly multi-sensory experience. Overall Design: Structure: Enclosed VR capsule or room designed to resemble the interior of a spaceship. Capacity: Accommodate up to 5 participants at a time. Accessibility: Ensure easy entry and exit, including provisions for visitors with disabilities. VR System: Headsets: High-resolution VR headsets with a minimum resolution of 2160 x 1200 per eye, 90Hz refresh rate, and wide field of view (FOV) of at least 110 degrees. Tracking: Advanced tracking system (e.g., inside-out tracking or external sensors) for precise movement detection. Computing Power: High-performance VR-ready PCs or gaming consoles with at least an Intel i7 processor, 16GB RAM, and NVIDIA GTX 1080 or equivalent graphics card. 5D Experience Components: Motion Seats: Ergonomically designed motion seats with 6 degrees of freedom (DOF) to simulate movements such as liftoff, space travel, and re-entry. The seats should support tilting, vibrating, and other motion effects. Haptic Feedback: Integrated haptic feedback devices in seats and handrails to provide physical sensations corresponding to the VR experience. Environmental Effects: Systems to create additional sensory effects, such as wind, heat, and mist, synchronized with the VR content. Sound System: Surround sound system with spatial audio capabilities to enhance immersion. Minimum specifications: 7.1 channel setup, high-	2	Per Unit	Rs …….

		fidelity speakers, and subwoofers. Content: Simulation Experience: Realistic VR simulation of a spaceship journey, including liftoff, space travel, planetary flybys, and re-entry. Interactive Elements: Interactive components within the VR experience, allowing participants to perform tasks or make decisions that influence the journey. Educational Content: Informational overlays and audio narration providing educational insights about space, planets, and spacecraft. Safety and Comfort: Seating: Comfortable, adjustable seating with secure harnesses to ensure visitor safety during motion sequences. Ventilation: Adequate ventilation system to maintain a comfortable environment inside the VR capsule or room. Emergency Stop: Easily accessible emergency stop button to halt the experience if necessary. Installation: Structural Integrity: Ensure the structural integrity of the VR capsule or room, with all components securely mounted and stable. (Representative Image)			
L1	**I am the Astronaut.. .!!!**	Base size: 24” x 28” x 1.5” Base Ply thickness: 10mm Astronaut Height: 64” Width: 35” Depth: 10~12” Helmet Opening Hole: 10” diameter Total weight: 20~21 Kg Material: General Purpose Resin 3D mould with thickness 3~5 mm Inner Layer with Black Velvet cloth 1 inch Square pipe MS steel material 18 inch = 2 nos. Nitrocellulose Matt Paint White, Red, Gray & Blue colour Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L2	**8 Planet Solar System Orrery - (Precision Mechanical model)**	Box Size: 621 x 621 x 100 mm without acrylic cap Model Size: 621 x 621 x 621 mm with acrylic cap 18mm Prelaminated board Acrylic cap 4mm thickness 584 x 584 x 521 mm 4 colour printed 3mm Vinyl Sunboard 585 x 585 mm = 1 Electrical 30 RPM 12V DC motor 6 Ampere 240V 1-Way Switch 18 inch 8mm steel pipe for holding planets, 3D printed square rods for mounting the planet, 3.5mm Acrylic gears with 13,17,27,33 teeth - total 48 gears, Diameter Sun 41mm, Mercury 7.5mm, Venus 21.3, Earth 21.5mm, Mars 12.5 mm, Jupiter 30mm, Saturn 27mm, Uranus 20mm Neptune 20mm Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….

L3	**Elements in the Universe !!!**	Powder coated Metal Box Size: 615 x 470 x 30 mm Acrylic 3mm 470 x 40 x 440 mm Model size: 615 x 60 x 470 mm Preprogrammed Microcontroller, Power supply 5V 5Amp = 1nos Pixel led = 20 nos Lcd screen size = 1nos Push button = 20 nos Printed Laser cut metal sheet 1mm thick 18”x24” with powder coating 4 colour UV Print metal sheet 1mm thick 615 x 470 mm with powder coating Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L4	**Telescope Ray Diagram**	Model size 790 x 410 x 45 mm Powder coated metal box 780 x 400 x 30 mm Acrylic cap 790 x 410 x 40 mm UV print acrylic size 3mm thick 778 x 398 mm Microcontoller based preprogrammed Pixel Led Power supply: 12V 2Amp Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L5	**Light & Optics Experiment Kit**	Dimensions of light box 170 x 90 x 55mm Robust light box finished in Matt black with a 12V 36W S.B.C. axial filament lamp with 0.75m of twin flex. - Perspex Blocks(Prism): 1 rectangular, 1 semi-circular, 1 triangular prism 60° x 60° x 60° , 1triangular prism 90° x 60° x 30°, 1 triangular prism 90° x 45° x 45°. - Cylindrical Perspex lenses: 1 double concave, 1 double convex (both with the same radius curvature) 1 thick double convex. - Mirror : 1 plane glass(mounted on stand). - Black Plastic Slit Plates : 1 with three narrow slits & one narrow slit, 1 with four narrow slits and one wide slit. - Set of Eight Colour Filters: Primary red, primary green, primary blue, cyan, violet, yellow, orange, magenta. - Set of Eight Coloured Cards: Red, green, blue, violet, orange, cyan, yellow, pink.	1	Per Unit	Rs …….

L6	**Tarangan dial Wall mounted**	Model size 30”x40”x1.5” 12mm plywood frame A revolving star dial to locate stars & constellations any night, any time. Star dial diameter: 28” Outer jacket dimension: 30”x40” Base Material: Polycarbonate sheet Printing Ink: Eco solvent Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L7	**Giant Metrewave Radio Telescope model**	Model size 300 x 300 x 400 mm 18mm thick Prelaminated box 365 x 365 x 100mm 250 x 5 x 300 mm Acrylic cylinder with lead cap 2.5 mm MDF material, 5 inch round base, Dish Antenna diameter 9 inch Replica model of GMRT dish antenna	1	Per Unit	Rs …….
L8	**How Eclipse Occur ?**	18mm Prelaminated board model box 800 x 250 x 300 mm with desired design Earth Globe Diameter: 20 mm Moon diameter: 8~10 mm Earth mounted on 2 mm MS bar BO motor 30 rpm Power supply: 9V 1 Amp 6 Ampere 240V 1-Way Switch 6mm wooden box 7”x2.5” White light Focus box7”x7”x4” Adjuster bolt 6x150mm M6 nut Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L9	**Annular & Total Solar Eclipse**	18mm Prelaminated board model box 820 x 250 x 300 mm with desired design Moon white bead diameter: 20 mm Toggle switch 6mm bar 7 inch long with threading, stopper MS plate 1mm thick, 4mm glass 4”x7” 3mm white acrylic 4”x7” with 2.25” round cut at the centre Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L10	**Sun’s path through Zodiac**	18mm Prelaminated board box model size 500 x 500 x 200 mm 3mm Acrylic cap 500 x 500 mm Geared motor 50rpm Power supply 12V 2 Amp 3,.8W bulb with holder = 1 Wooden batten 1x0.5x9 inch 3mm black printed acrylic box 120 x 90 x 38 mm = 12 8mm mdf with laser marking 460 x 460 mm Pixel LED strip with power supply 12V 1Amp Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….

L11	**Sun Earth Moon System**	18mm Prelaminated board box 585 x 585 x 130 mm Model size 585 x 585 x 295 mm 3mm acrylic cap 545 x 545 x 285 mm 3mm UV printed white acrylic with Month, dates printed on it 545 x 545 mm 6mm Aluminium bar 14" connected with gear Set of 8 gears in 3 mm acrylic laser cutting 3D printed assembly for showing Moon orbit and tilted plane with respect to Sun-Earth orbit Sun diameter 41mm, 3D printed Earth diameter 21.5mm, Moon diameter 8~10mm Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L12	**SATELLITE COMMUNICATION MODEL**	Model size 790 x 410 x 45 mm Powder coated metal box 780 x 400 x 30 mm Acrylic cap 790 x 410 x 40 mm UV print acrylic size 3mm thick 778 x 398 mm Microcontoller based preprogrammed Pixel Led Power supply: 12V 2Amp Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L13	**Newton's Disk**	18mm Prelaminated board box model 370 x 280 x 450 mm L shaped 3mm acrylic 370 x 620 mm 3mm UV printed acrylic disk 8" diameter 2000rpm motor Power supply: 9V 1 Amp 6 Ampere 240V 1-Way Switch Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L14	**Pragyan Rover with camera**	Metal chasis 1mm MS laser cut 200mm x 100mm x 30mm BO motor 30RPM X 6 Wheel 10x60 = 6 DC Motor driver dual L298D Micro controller Atmega328P Battery Lithium Ion 8.4V X 1 Adapter 9V 1Amp Camera specification: 2AMP IP camera S-CT6B 6ch 2.4GHz transmitter & receiver It has 0.8W transmitter with range up to 1km line of sight.	1	Per Unit	Rs …….
L15	**Interior of the Sun**	Model size 365 x 365 x 525 mm 18mm thick Prelaminated box 365 x 365 x 100mm 3mm Acrylic cap 330 x 330 x 445 mm Sun Diameter: 32 cm Model shows interior structure of Sun Premoulded model in FRP / plastic material Waterproof surface Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….

L16	**Illuminated Earth**	Model size 365 x 365 x 525 mm 18mm thick Prelaminated box 365 x 365 x 100mm 3mm Acrylic cap 330 x 330 x 445 mm Earth Diameter: 20 cm Physical relief with light OFF and physical cum Political with light ON, with unbrakable die casted steel base and arc. Power supply 220V Waterproof surface Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L17	**Longitudinal & Latitudinal model**	Model size 365 x 365 x 525 mm 18mm thick Prelaminated box 365 x 365 x 100mm 3mm Acrylic cap 330 x 330 x 445 mm Sphere Diameter: 32 cm Show the direction of Earth rotation, the earth axis, the 2 poles, polar circles, tropic of capricorn and cancer Moulded plastic high quality material Waterproof surface Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L18	**3D Glowing Moon**	Model size 300 x 300 x 300 mm 18mm Prelaminated board box 300 x 300 x 100 mm 3mm Acrylic cap 200 x 200 x 200 mm 3D printed Moon Diameter 15~18 cm In accordance with the astronomical data, every mountain and crater on the lunar surface are reproduced. USB RECHARGEABLE MOON LIGHT Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L19	**Celestial Star Globe Transparent**	Model size 365 x 365 x 525 mm 18mm thick Prelaminated box 365 x 365 x 100mm 3mm Acrylic cap 330 x 330 x 445 mm Globe Diameter: 30 cm Transparent acrylic sphere with constellations & stars printed on surface of the sphere. Earth mounted on 3 mm MS bar inside sphere. 20mm yellow Sun attached with 2mm steel wire with moving knob. Acrylic base plate 8.5-inch diameter Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….
L20	**Celestial Globe Illuminated**	Model size 365 x 365 x 525 mm 18mm thick Prelaminated box 365 x 365 x 100mm 12” Classic celestial sketch premium rotating globe Made with superior Quality imported Plastic Completely washable. Metallic arch [graded, scaled]. Base is made up of high-quality abs. Instruction on 3mm Vinyl Sunboard Size: 9x4.25 Inch	1	Per Unit	Rs …….

L21	**Northern & Southern Sky chart**	This "Northern & Southern Sky Chart" backlit exhibit is intended to provide an engaging and educational experience for museum visitors, showcasing the beauty and complexity of the northern night sky. Overall Design: Dimensions: 4 feet in width and 6 feet in height. Frame: High-quality, durable materials for the frame, such as brushed aluminum or powder-coated steel, to provide a sleek and modern appearance. Backlit Panel: LED backlighting to ensure uniform illumination and high visibility. Sky Chart Content: Star Map: Detailed and accurate star map of the northern & southern sky, including major stars, constellations, and notable celestial objects. Constellation Lines: Clearly marked constellation lines to help identify and connect the stars forming each constellation. Labels: Clear and readable labels for stars, constellations, and celestial objects, using a font that is easy to read under low lighting conditions. Illustrations: Subtle illustrations of mythological figures representing the constellations, enhancing the visual appeal and educational value.	1	Per Unit	Rs …….
L22	**3D Mars Mission Posters**	This "3D Mars Mission Poster" backlit frame is intended to provide an engaging and educational experience for museum visitors, showcasing the excitement and challenges of Mars exploration. Overall Design: Dimensions: Customizable, with a suggested size of 4 feet in width and 6 feet in height. Frame: High-quality, durable aluminum or metal frame with a sleek finish. Backlit Panel with LED backlighting for uniform illumination and enhanced visual appeal. 3D Poster: High-Resolution Image: A detailed, high-resolution 3D image depicting a Mars mission, including elements such as the Mars surface, rovers, landers, and astronauts. 3D Effect: Advanced printing techniques to create a realistic 3D effect, providing depth and dimension to the poster. UV Printing: UV-resistant inks to ensure long-lasting and vibrant colors. Backlighting: LED Backlighting: Energy-efficient LED lights to provide even illumination across the entire panel. The lighting should enhance the 3D effect and highlight key elements of the poster. Content: Mars Surface: Detailed depiction of the Martian surface, including geological features such as craters, mountains, and valleys. Mars Rover: Accurate representation of a Mars rover, such as the Perseverance or Curiosity rover, highlighting its scientific instruments and exploration activities. Mars Lander: Representation of a Mars lander, such as the InSight lander, showcasing its mission objectives and scientific equipment. Additional accessories to include: Red & Cyan 3D Glasses (10 no.s)	1	Per Unit	Rs …….

L23	**Telescope Making Kit with Stand with Video support**	Black Cylinder with Sticker qty 2, Joint Piece qty 1, Object piece qty 1, Assembly qty 1, Rack qty 1, Gear qty 1, Wheel qty 2, Pinion cap qty 1, 20X Eye piece cap qty 1, Spacer qty 1, Lens body qty 1, Belt qty 1, Tune holder with 3 X 20/25 bolt - 1 washer & 1 nut qty 3, Tripod holder qty 1, Cylinder holder with moulded 5 X 25 bolt - one M6 washer & two M5 nuts qty 1, Molulding bolt 6 X 50 qty 1, Wing nut M6 qty 1, Assembly screw 2 mm X 6.5 mm qty 2, Plano Convex lens 17 mm diameter qty 2, Plano Convex lens 42 mm diameter qty 1, Black paper ring qty 1, Black PVC Sticker 1" X 7.5" qty 1, Foam piece 1" X 5"- thickness 5 mm qty 1, Steel pipe 9.5" qty 3, Stand bush qty 3, Tissue paper qty 1, Instruction manual	10	Per Unit	Rs …….
L24	**Bulging of Earth with Video support**	MDF board 5.5" X 4" thickness 8 mm - qty 1, Wooden batten 1" X 0.5" length 1.5" qty 1, Pink PVC patti 2 cm X 40 cm with 3 holes of 8 mm qty 3, Toy motor with DST on opposite side of the terminals 1, Metal rod of outer diameter 5 mm / 6 mm and hole of 2.2 mm diameter at one side & Round DST one one side of rod qty 1, Double cell holder with wires stripped at 1" qty 1, Hooks of B6 qty 2, Cellotape 1, Plastic bushes with moulded nut with M3 x 15 CSK bolt fitted in it qty 4, Instruction manual	10	Per Unit	Rs …….
L25	**Hanging Solar System with Video support**	250 GSM 4 colour laminated print and pre punched 8 Planets set Sun with solar flare cut out 7" Spoke with cap qty 4, 11.5" Spoke with cap qty 4, Hub 2, Thread bundle 1	10	Per Unit	Rs …….
L26	**Tarangan with Video support**	Paper dial and jacket. 9.5"x13" It is a bilingual dial to locate stars and constellation on any night at any time. It is called as Planisphere and is very handy tool for sky watching.	10	Per Unit	Rs …….
L27	**Motorized Eclipse Model with Video support**	Wooden base 3.5" X 7.5" thickness 8 mm qty 1, Wooden batten 1" X 0.5" length 7.5" qty 2, Black base bush with M3X20 bolt qty 4, Slow RPM round motor with big shaft with wire striped at 0.75" qty 1, 1" pulley with drills qty 1, 6 cm Spoke bent in right angle qty 1, 3.5" spoke qty 1, fan bush for pulley qty 1, big white bead qty 1, 1" X 1" foam thickness 15 mm with DST qty 1, 1" ball with 2 mm hole qty 1, earth print matching ball qty 1, M3 X 20 bolt and nut qty 3, Locking strips qty 3, 4" red wire with stripping on both sides qty 1, 9V snap with wires stripped qty 1, 9V battery with DST on one side qty 1, Rocker switch qty 1, B6 hook qty 2, Torch qty 1, corrugated box fitted with 15 mm foam using DST 1" x 2" qty 1, Instruction leaflet	10	Per Unit	Rs …….

L28	**Star Projection with Video support**	Black print 1, 5.25" X 5.25 " foam thickness 15 mm qty 1, 5.25" X 5.25" Corrugated sheet (punched) qty 1, Moulding bolt M6 X 35 qty 1, M6 nut qty 2, White LED bulb qty 2, LED bulb holder qty 1, 9V battery snapper with switch qty 1, red & black wire of 6" extra soldered to snapper 1 each, Wooden battern 1" X 0.5" length 5" qty 1, Wooden battern 1" X 0.5" length 2" qty 1, Wooden base 4.5" X 7" qty 1, M3 x 20 CSK nut-bolt qty 9, M4 X 45 bolt qty 1, M4 nut qty 2, Hinges 1" length 25 mm qty 1, Black bushes with moulded nut inside qty 4, Half circle protractor with DST of 1/2" pasted at straight side qty 1, M6 X 19 Screw CSK qty 2, Instruction leaflet	10	Per Unit	Rs …….
L29	**Nearby 20 Stars with Video support**	Orange coloured small beads resting on tip of chop sticks (for stars) qty 20,White coloured bead resting on tip of chop stick (small) (for sun) qty 1, 15 mm foam base of matching the print size qty 1, Pins to fix paper on foam base qty 10, Cello tape 1, Chop sticks of 22 cm length (not smaller than this) qty 27, prints : Black coloured print of base sheet 9 x 111Card giving names and length of sticks of stars qty 1, Titles of 20 stars printed on card strip qty 1	10	Per Unit	Rs …….
L30	**Parallax method of star distance with Video support**	Wooden base 5 x 3.25" size with 2 holes on two sides qty 1, Spokes with threading of 4" length qty 2, Identical 1" balls of same colour with 2 holes made 90 degree apart - one for spoke and other for hook qty 2, Hooks B2 to fit in the holes of balls qty 2, Red coloured threads - length 2 feet each qty 2, Disk magnet of 25 mm qty 1, 3" long nail qty 1, Small bead fitting on top of tip of nail qty 1, Board pin 1, Prints : Card of 5 x 3.25" size matching wooden board size qty 1, Sky print of about 5" x 7" qty 1	10	Per Unit	Rs …….
L31	**Astrolabe with Video support**	5.5" X 5.5" Wooden base 8 mm thickness qty 1, Full circle protractor qty 1, Half circle protractor qty 1, 0.5" X 0.5" Wooden batten 8" length qty 1, Paper straw qty 2, Metal patra 3.5" qty 1, Big washer of outer diameter 3 cm qty 1, Thread 1' qty 1, M6 X 35 bolt -nut-washer 1 each, 1" X 1" foam pieces 10 mm / 15 mm qty 4, 1" X 1" DST paste at 4 corners of wooden base qty 4, M3 x 15 bolt qty 1, M3 nut qty 2, Instruction leaflet 1	10	Per Unit	Rs …….
L32	**Galileo with Video support**	Galileo Print qty 1, Plastic kit base qty 1, M4 X 45 Nut & Bolt 1 each, WIP straw - 22 cm qty 1, Toothpick qty 5, Big mani qty 4, Wooden Stick 15 cm qty 6, Paper straw qty 2 cm qty 1, Information leaflet 1	10	Per Unit	Rs …….

L33	**ResourceSat (IRS satellite model) with Video support**	Colour Print with cut outs qty 1, Black foam 2.5" X 2.5" thickness 10 mm qty 1, Paper pins qty 10, Board Pins (golden) qty 2, Golden foil 2.5" X 9" qty 1, Spoke 10" with thread qty 1, Hard straw 5" qty 1, Instruction Leaflet 1	10	Per Unit	Rs …….
L34	**Columbia with Video support**	170 GSM ART paper pre punched 4 Colour print with cutouts , Instruction leaflet	10	Per Unit	Rs …….
L35	**Aryabhata with Video support**	250 GSM Duplex paper pre punched Printed sheet, Spoke 3" qty 4, Board pins qty 4, Instruction leaflet	10	Per Unit	Rs …….
L36	**Spectroscope Kit**	Duplex spectroscope, CD, Mg ribbon, candle	10	Per Unit	Rs …….
L37	**Study of Energy Kit**	Study of Energy Kit (7 in 1) Learn about different energy concepts by performing experiments or making mini working models. DC Generator, Solar energy, Electricity from flowing water, Windmill, Multiple solar energy, AC Generator	10	Per Unit	Rs …….
L38	**Robot kits**	Robots Learn about basics of Robotics, make BugBot, DrawBot, Racer robot, Clap robot, Lines follower robot	10	Per Unit	Rs …….
L39	**Electronics Study Kit**	Electronics Study Kit Learn basics of electronics using simple material. Set of 5 kits, Automatic street light, Electronics for fun using IC555, Wireless power transfer, Vibration detector, Electronics for fun using transistor	10	Per Unit	Rs …….
L40	**Light Study Kit**	Light Study Kit (Set of 6 kits) Learn basic concepts of light using simple experiments like film projector, infinite street light, infinity well, Newton's disk, easy optics	10	Per Unit	Rs …….
L41	**Science at home**	Science at home (Set of 4 Kits) Learn how domestic appliances works? Electric Bell, Separation techniques, V type engine, Vacuum cleaner	10	Per Unit	Rs …….
L42	**Electricity Study Kit**	Electricity Study Kit (Set of 5 kits) Study the concepts of electricity with simple kits namely Hand Steadiness Tester, Basics in Electricity, Heater and Rheostat, Match It Right, Electricity from Lemon and Salt Battery	10	Per Unit	Rs …….
L43	**Fun Science Kit**	Fun Science Kit (Set of 8 kits) Science is a vast subject. Various concepts can be explained using Air Activity Kit, Illusion Cards, Kaleidoscope, Levitating Pencil, Open Sesame, Periscope, Stethoscope, Wonders in Physics	10	Per Unit	Rs …….

L44	**Biology Study Kit**	Biology Study Kit (Set of 13 Kits) Biology can be learnt well using Simple Microscope 20x, Colour and Wash Digestive System, Colour and Wash Heart, Plant and Animal Cell, Double Helix DNA, Exploring Microscopic World, Food Chain, Herbarium Press, Know Your Body, Photosynthesis, Human Skeleton, Working of Eye, Working of Lungs	10	Per Unit	Rs …….
L45	**Lunar Laser Distance Measurement**	Model size 790 x 410 x 45 mm Powder coated metal box 780 x 400 x 30 mm Acrylic cap 790 x 410 x 40 mm UV print acrylic size 3mm thick 778 x 398 mm Microcontoller based preprogrammed Pixel Led & 16x2 lcd display showing distance & time calculations Power supply: 12V 2Amp	10	Per Unit	Rs …….
L37	**Wall paper 1 Our Solar System**	This will cover one complete wall of the hall and have details about our solar system, Sun, eclipses, Moon and many related topics. A brief history of Astronomy will also be included on this wall.	1	Per Unit	Rs …….
L38	**Wall paper 2 Deep Sky Observations**	Washable High quality wallpaper This will cover one complete wall of the hall and have details about galaxies, nebulae, star types, star life cycle, black hole and more	1	Per Unit	Rs …….
L39	**Wall paper 3 Technology in Astronomy**	Washable High quality wallpaper This will cover one complete wall of the hall and have details about telescopes, radio astronomy, ISRO missions and more.	1	Per Unit	Rs …….
L40	**Wall paper 4 Mars mission**	Washable High quality wallpaper This will cover one complete wall of the hall and have details about Mars missions, 3D images of Space and Astronomy etc.	1	Per Unit	Rs …….
L41	**Table**	18mm Prelaminated board table Size: 600 x 1200 x 740 mm with storage facility	16	Per Unit	Rs …….
L42	**Dobsonian Telescope**	1300mm focal length 160mm Primary mirror 360 deg Rotating Dobsonian Base Heavy Duty Metal 2" Helical Rack & Pinion focuser 2" to 1.25" Adapter 1.25" 25mm Astroscopic Eyepiece: 52X power 1.25" 10mm Plossl Eyepiece: 130X power 1.25" 3x2 Element Barlow Red Dot Finder Heavy duty secondary & primary mirror cells Carrying handle Accessory tray Gross weight 23.6 kg	1	Per Unit	Rs …….

M	**GSLV Mark III 1:5 Outdoor display**	This "GSLV Mark III" 1:30 scale model is intended to provide an educational and visually impactful representation of one of India's most significant space achievements. Overall Design: Scale: 1:5 scale model of the GSLV Mark III. Height: Approximately 14 meters (45.93 feet).Structure and Materials: Frame: High-strength, corrosion-resistant steel or aluminum frame to ensure structural integrity and durability. Exterior: UV-resistant, weatherproof fiberglass or composite material for the rocket body, with accurate detailing and paint to match the original GSLV Mark III. Coating: Protective coatings to withstand outdoor weather conditions, including rain, UV radiation, and temperature variations. Anchoring System: Secure anchoring system to safely mount and stabilize the model in an outdoor setting. Details and Features: Stage Representation: Accurate representation of all three stages of the GSLV Mark III, including the solid rocket boosters (S200), liquid core stage (L110), and cryogenic upper stage (C25). Booster Details: Detailed modeling of the solid rocket boosters, including attachment points and separation mechanisms. Core Stage: Accurate representation of the liquid core stage with detailed fuel tanks and inter-stage structures. Upper Stage: Detailed cryogenic upper stage, including the cryogenic engine and associated plumbing. Color and Markings: Authentic paint scheme with accurate colors, logos, and markings, including the ISRO logo, Indian flag, and mission-specific decals. (Representative image)	1	Per Unit	Rs …….
N	**Informative Wall**	Informative Vinyl Sunboard pasted on wall 3000~3200 Sqft	1		

१) सदर कामाची सूचना दि. १०/०८/२०२४ ते दि. १९/०८/२०२४ पर्यंत सकाळी ११.०० पर्यंत उपलब्ध राहणार आहेत.

२) सीलबंद निविदा दि. १९/०८/२०२४ रोजी सकाळी ११.०० वाजेपर्यंत पनवेल महानगरपालिकेच्या उद्यान विभागात स्विकारण्यात येतील व प्राप्त झालेली दरपत्रके शक्यतो दि. १९/०८/२०२४ रोजी सकाळी ११.३० (शक्यतो) वाजता उपस्थित ठेकेदार यांच्या समक्ष उघडण्यात येतील.

३) अटी व शर्ती युक्त निविदांचा विचार केला जाणार नाही.

सही /-
उप आयुक्त
उद्यान विभाग
पनवेल महानगरपलिका

जा.क्र पमपा/ उद्यान /५५२४/प्र.क्र.०५/२७४/२०२४
दि . ०९/०८/२०२४

प्रत माहितीस्तव —

१. प्रसिध्दीकरीता

२. माहिती फलक करीता