

GUJARAT NATIONAL LAW UNIVERSITY  
GANDHINAGAR

Course: Air and Space Law  
Semester-VIII (Batch: 2015-20)

End Semester Examination: April-May 2019

Date: 11<sup>th</sup> May, 2019

Duration: 3 hours

Max. Marks: 50

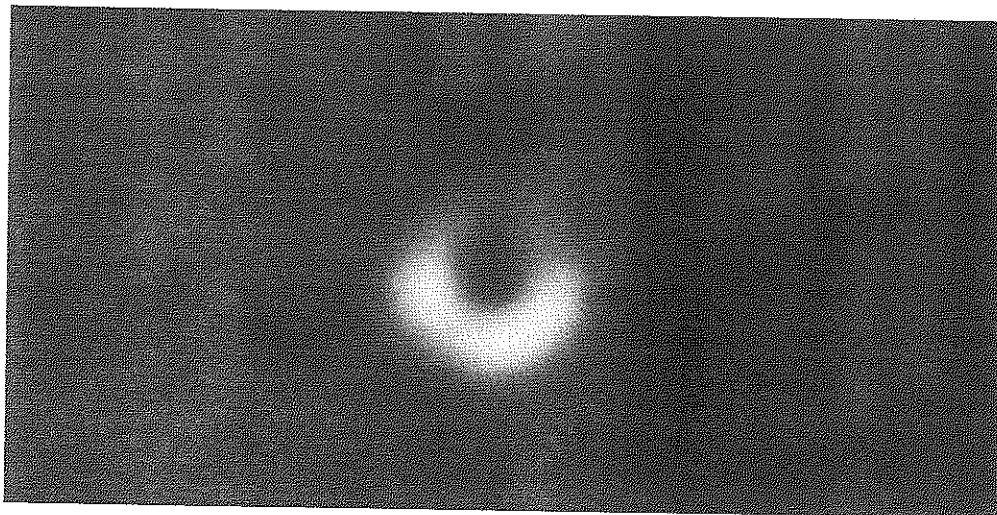
**Instructions:**

- Read the questions properly and write the answers in the given answer book.
- The respective marks for each question are indicated in-line.
- Do not write anything on the question paper.
- Indicate correct question numbers in front of the answers.
- No questions or clarifications can be sought during the exam period, answer as it is, giving reason, if any.

Attempt any five questions:

Marks

- Q.1 Sister Mary Jucunda (a nun who worked among the starving children of Kabwe, Zambia, Africa) wrote a letter on 6 May 1970 to Dr. Ernst Stuhlinger (Associate Director for Science at the Marshall Space Flight Centre, in Huntsville, Alabama, US) questioning the value of space exploration and the 'expenditures of billions of dollars for a voyage to Mars, at a time when many children on this Earth are starving to death'. Nearly half a century later, scientists have succeeded in capturing the following photo of super-massive black hole M87\* located at the centre of the gargantuan elliptical galaxy Messier 87, or M87, 53 million light-years away. (10)



Learning about mysterious structures in the universe provides insight into physics and allows scientists to test observation methods and theories like Einstein's theory of general relativity.

How far do you think it is worth investing in space exploration? In what manner and to what extent Space Law facilitates this endeavour? Elucidate.

- Q.2 Event 1: 'On 19 February 2019, President Donald Trump signed Space Policy Directive-4 (SPD-4) ordering the Pentagon to establish the Space Force as the sixth branch of the (10)

United States military, to go along with the Army, Navy, Air Force, Marines and Coast Guard. The main goal of the Space Force is to secure and extend American dominance of the space domain.'

Event 2 (Nearly a month later): 'Defence Research and Development Organisation (DRDO) fired 13m-high, three-stage interceptor missile (which was fitted with two solid-propellant rocket motor stages and employing a hit-to-kill capable 'Kill Vehicle, KV) to target the 740 kg Microsat-R Earth observation satellite under 'Mission Shakti'. KV's onboard advanced terminal guidance system, which featured a strap-down (non-gimballed) imaging infrared (IIR) seeker and an inertial navigation system that used ring-laser gyroscopes (RLGs), detected and tracked Microsat-R at an altitude of 283 km in low-Earth orbit (LEO). The Microsat-R was designed by DRDO and was specifically launched by the Indian Space Research Organisation (ISRO) two months earlier for the ASAT (Anti-Satellite) Missile Test, which had been under planning since 2016 and had also undergone numerous simulation trials. After successful conduction of this Test, India has joined the elite group of nations in the world to attain the capability to interdict and intercept a satellite in outer space. What makes this feat glorious is that it is based on completely indigenous technology.'

The two seemingly unconnected events carry enough potential to throw serious challenges to the principles contained in Space Law.

How far do you agree? Justify your agreement or otherwise.

- Q.3 '2019 NASA budget proposed by the Trump administration provides resources to advance exploration of the moon and deep space and pursue cutting-edge science, technology and aeronautics research breakthroughs. NASA's Acting Administrator Robert Lightfoot's in his Address on the state of the agency explained that the Trump administration wants to see a focus on moon missions. To meet these ends, \$10.5 billion is focused on lunar exploration. The concept for the Mars mission came from a study from the re-established National Space Council that became Space Policy Directive 1, which the President signed and is funded in this budget proposal. The plan is intended to lead to the development of space infrastructure for a lunar orbital platform gateway. The first piece which is scheduled for delivery in 2022. Robotic landers acting as scouts will enhance scientific and strategic exploration of the moon leading to eventual human exploration of Mars.'

Do you think the various provisions contained in the Moon Agreement will prove adequate to support the developments narrated in the foregoing paragraph?

- Q.4 'There has been a surge in demand for satellites and the demand has reached a stage where Indian Space Research Organisation (ISRO) has to deliver 18-20 satellites in a year. This is very difficult for ISRO, given the type of infrastructure and manpower they have. So a situation has come wherein ISRO has to come out in a bigger way, to establish the current subsystems providers and graduate them to partnerships.' Therefore, ever increasing demand and heightened expectations that will arise will require involvement of the emerging private sector. Indian Government has finally woken up to the need of having space law and has come out with a Bill for this purpose.

Discuss the provisions of the relevant Bill in the light of the above-mentioned observation.

- Q.5 'Terror has struck in the worst possible manner in our backyard, i.e. Sri Lanka. Described as one of the biggest terror attacks in the South Asian region, six serial blasts ripped

through Sri Lanka killing 253 persons. Violence punctured a decade of relative peace in the country following the end of its civil war in 2009. ISIS has claimed responsibility for the attacks. Terrorism has no religion and no one is safe. India has also faced the brunt of terrorism including aerial terrorism.

In view of the afore-stated observation, analyse, in what manner, Air Law and policy has addressed the challenges posed by Aerial terrorism in India.

- Q.6 On 1 January 2019, Sarla was travelling as passenger on a KLM flight from Kuala Lumpur to Amsterdam. She was not yet 16 years of age and was travelling on her own. She was seated next to two men. After a meal, she fell asleep and woke to discover the hand of the man next to her caressing her left thigh from the hip to the knee. She got up, and told an air hostess what had happened and was moved to another seat. She was very distressed. On her return to England, a doctor found that she was suffering from clinical depression amounting to a single episode of a major depressive illness. She filed an action for mental injury in the court of relevant jurisdiction in the UK. Decide her petition in the light of the relevant provisions and judicial precedents of Air Law. (10)
- Q.7 On the night of 1 July 2002, Bashkirian Airlines Flight 2937, a Tupolev Tu-154 passenger jet, and DHL Flight 611, a Boeing 757 cargo jet, collided in mid-air over Überlingen, a southern German town on Lake Constance. All 69 passengers and crew aboard the Tupolev and the two crew members of the Boeing were killed. The investigations and the events aftermath the crash highlighted serious questions of safety and security in the field of aviation. Analyse the unfortunate incident from the perspectives of Air Law. (10)

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