Mains Practice Question

Q. ISRO’s role has been impeccable in making India a global space power, however, there are many challenges and opportunities in the new space age that ISRO needs to address. Discuss. (250 words)

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Approach

- Briefly mention about ISRO’s role in making India a global space power.
- Explain ‘new space age’ and mention the challenges and opportunities for ISRO.
- Conclude by mentioning the need for regulation in space sector.

Introduction

It is only because of ISRO’s success that India is now acknowledged as a space power in the world. ISRO has delivered many projects serving military as well as socio-economic and commercial needs of India.

The major focus areas of space based programmes are satellite communication (INSAT, GSAT), earth observation (Indian Remote Sensing, Geographical Information Systems), satellite-aided navigation (NavIC - Navigation with Indian Constellation), deep space probes (Chandrayaan, Mangalyaan missions), etc.

Body

There is emergence of **‘new space age’** which is used to refer to a global sector of new aerospace companies and ventures working independently of governments to develop faster, better, and cheaper access to space for commercial purposes.

Opportunities in the new space age

- Despite ISRO’s impressive capabilities, India’s share in global space industry is estimated at $7 billion (just 2%) covering broadband, DTH television, satellite imagery and navigation. ISRO has significant potential to take lead in the **emerging space application services.**
- With developments in AI and Big Data Analytics **(Industrial Revolution 4.0),** several **startups** have mushroomed, which seek value to explore end-to-end services in the B2B and B2C segments using new space.
- The New Space start-ups discern a **synergy with government’s flagship programmes** like Digital India, Startup India, Skill India and schemes like Smart Cities Mission.
- There is an emerging market for **small satellite launch vehicles.** Globally, 17,000 small satellites are expected to be launched between now and 2030. ISRO is developing a small satellite launch vehicle (SSLV) expected to be ready in 2019.
- Further, with the coming up of **Defence Space Agency** and a **Defence Space Research Organization,** ISRO could now actively embrace an exclusively civilian identity.

Challenges

- **Absence of regulatory clarity** for the startups working in the space sector.

- With plans for space tourism in the future, there is risk of new space race by the private sector for **commercial exploitation** of the space sector.
- The **Outer Space Treaty** bars only state parties to the treaty form weaponization of outer space. Some irresponsible states may use private entities for illegitimate ends in the emerging domain of **'Astro-politics'.**
- There is a significant increase in capabilities of states in the global satellite launch missions. This has led to a risk of exponential increase in **space junk** from satellites which are no longer functional.
    - Anti-Satellite Weapons (ASAT) poses a huge risk to future space flights.

Conclusion

So with increasing competition, complexity and demand for space-related activities, there is a growing realisation that national legislation is needed to ensure overall growth of the space sector. A New Space law for India should aim at facilitating growing India's share of the global space economy to 10% in the coming decade.