

**UPSC CSE MAIN EXAM**  
**PREVIOUS YEAR QUESTIONS**  
**GENERAL STUDIES - PAPER - III**

- ❖ Indian Economy
- ❖ Environment and Ecology
- ❖ Science and technology
- ❖ Disaster Management
- ❖ Internal Security

**INDIAN ECONOMY**

*Topic: The Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.*

- Q.1) Faster economic growth requires increased share of the manufacturing sector in GDP, particularly of MSMEs. Comment on the present policies of the Government in this regard. [150 Words] [10 Marks] [2023]
- Q.2) What is the status of digitalization in the Indian economy? Examine the problems faced in this regard and suggest improvements. [150 Words] [10 Marks] [2023]
- Q.3) Most of the unemployment in India is structural in nature. Examine the methodology adopted to compute unemployment in the country and suggest improvements. [250 Words] [15 Marks] [2023]
- Q.4) Distinguish between 'care economy' and 'monetized economy'. How can care economy be brought into monetized economy through women empowerment? [250 Words] [15 Marks] [2023]
- Q.5) Economic growth in the recent past has been led by increase in labour activity." Explain this statement. Suggest the growth pattern that will lead to creation of more jobs without compromising labour productivity. [250 Words] [15 Marks] [2022]
- Q.6) Do you think the GST compensation fund has impacted the GST and created new federal tensions? [250 Words] [15 Marks] [2020]
- Q.7) Enumerate the indirect taxes which have been subsumed in the goods and services tax (GST) in India. Also, comment on the revenue implications of the GST introduced in India since July 2017. [150 Words] [10 Marks] [2019]

- Q.8)** Do you agree with the view that steady GDP growth and low inflation have left the Indian economy in good shape? Give reasons in support of your arguments. [150 Words] [10 Marks] [2019]
- Q.9)** How are the principles followed by NITI Aayog different from those followed by the erstwhile planning commission in India? [250 Words] [15 marks] [2018]
- Q.10)** How would the recent phenomena of protectionism and currency manipulations in world trade affect macroeconomic stability of India? [250 Words] [15 marks] [2018]
- Q.11)** Among several factors for India's potential growth, savings rate is the most effective one. Do you agree? What are the other factors available for growth potential? [150 Words] [10 Marks] [2017]
- Q.12)** How globalization has led to the reduction of employment in the formal sector of the Indian economy? Is increased formalization detrimental to the development of the country? [200 Words] [12.5 Marks] [2016]
- Q.13)** Justify the need for FDI for the developments of the Indian economy. Why there is gap between MOUs signed and actual FDIs? Suggest remedial steps to be taken for increasing actual FDIs in India. [200 Words] [12.5 Marks] [2016]
- Q.14)** The nature of economic growth in India in recent times is often described as a jobless growth. Do you agree with this view? Give arguments in favour of your answer. [200 Words] [12.5 Marks] [2015]
- Q.15)** Craze for gold in Indian has led to surge in import of gold in recent years and put pressure on balance of payments and external value of rupee. In view of this, examine the merits of Gold Monetization scheme. [200 Words] [12.5 Marks] [2015]
- Q.16)** Normally countries shift from agriculture to industry and then later to services, but India shifted directly from agriculture to services. What are the reasons for the huge growth-services vis-a-Vis industry in the country? Can India become a developed country without a strong industrial base? [200 Words] [12.5 Marks] [2014]

- Q.17)**“While we flaunt India’s demographic dividend, we ignore the dropping rates of employability. “What are we missing while doing so? Where will the jobs that India desperately needs come from? Explain. [200 Words] [12.5 Marks] [2014]
- Q.18)** With a consideration towards the strategy of inclusive growth, the new Companies Bill, 2013 has indirectly made CSR a mandatory obligation. Discuss the challenges expected in its implementation in right earnest. Also discuss other provisions in the Bill and their implications. [200 Words] [10 Marks] [2013]
- Q.19)**What were the reasons for the introduction of Fiscal Responsibility and Budget Management (FRBM) Act, 2003? Discuss critically its salient features and their effectiveness. [200 Words] [10 Marks] [2013]
- Q.20)**What is the meaning of the term ‘tax expenditure’? Taking housing sector as an example, discuss how it influences the budgetary policies of the government. [200 Words] [10 Marks] [2013]
- Q.21)**Food Security Bill is expected to eliminate hunger and malnutrition in India. Critically discuss various apprehensions in its effective implementation along with the concerns it has generated in WTO. [200 Words] [10 Marks] [2013]
- Q.22)**Discuss the rationale for introducing the Goods and Services Tax (GST) in India. Bring out critically the reasons for the delay in roll out for its regime. [200 Words] [10 Marks] [2013]

***Topic: Inclusive growth and issues arising from it***

- Q.1)** Is inclusive growth possible under market economy? State the significance of financial inclusion in achieving economic growth in India. [150 Words] [10 Marks] [2022]
- Q.2)** Explain intra-generational and inter-generational issues of equity from the perspective of inclusive growth and sustainable development. [150 Words] [10 Marks] [2020]
- Q.3)** It is argued that the strategy of inclusive growth is intended to meet the objectives of inclusiveness and sustainability together. Comment on this statement. [250 Words] [15 marks] [2019]

- Q.4)** “Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs)”. Comment on the progress made in India in this regard. [150 Words] [10 Marks] [2018]
- Q.5)** What are the salient features of ‘inclusive growth’? Has India been experiencing such a growth process? Analyze and suggest measures for inclusive growth. [250 Words] [15 marks] [2017]
- Q.6)** Pradhan Mantri Jan-Dhan Yojana (PMJDY) is necessary for bringing unbanked to the institutional finance fold. Do you agree with this for financial inclusion of the poorer section of the Indian society? Give arguments to justify your opinion. [200 Words] [12.5 Marks] [2016]
- Q.7)** What are ‘Smart Cities’? examine their relevance for urban development in India. Will it increase rural-urban differences? Give arguments for ‘Smart Villages’ in the light of PURA and RURBAN Mission. [200 Words] [12.5 Marks] [2016]
- Q.8)** Comment on the challenges for inclusive growth which include careless and useless manpower in the Indian context. Suggest measures to be taken for facing these challenges. [200 Words] [12.5 Marks] [2016]
- Q.9)** Capitalism has guided the world economy to unprecedented prosperity. However, it often encourages short-sightedness and contributes to wide disparities between the rich and the poor. In this light, would it be correct to believe and adopt capitalism for bringing inclusive growth in India? Discuss. [200 Words] [12.5 Marks] [2014]

**Topic: Government Budgeting**

- Q.1)** Distinguish between Capital Budget and Revenue Budget. Explain the components of both these Budgets. [150 Words] [10 Marks] [2021]
- Q.2)** Define potential GDP and explain its determinants. What are the factors that have been inhibiting India from realizing its potential GDP? [150 Words] [10 Marks] [2020]
- Q.3)** The public expenditure management is a challenge to the Government of India in context of budget making during the post liberalization period. Clarify it. [250 Words] [15 marks] [2019]



**Q.4)** Comment on the important changes introduced in respect of the Long term Capital Gains Tax (LCGT) and Dividend Distribution Tax (DDT) in the Union Budget for 2018-2019. [150 Words] [10 Marks] [2018]

**Q.5)** One of the intended objectives of Union Budget 2017-18 is to 'transform, energize and clean India'. Analyse the measures proposed in the Budget 2017-18 to achieve the objective. [250 Words] [15 marks] [2017]

**Q.6)** Women empowerment in India needs gender budgeting. What are requirements and status of gender budgeting in the Indian context? [200 Words] [12.5 Marks] [2016]

**Topic: Major crops-cropping patterns in various parts of the country,–different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.**

**Q.1)** How does e-Technology help farmers in production and marketing of agricultural produce? Explain it. [150 Words] [10 Marks] [2023]

**Q.2)** What are the direct and indirect subsidies provided to farm sector in India? Discuss the issues raised by the World Trade Organization (WTO) in relation to agricultural subsidies. [150 Words] [10 Marks] [2023]

**Q.3)** Explain the changes in cropping pattern in India in the context of changes in consumption pattern and marketing conditions. [150 Words] [10 Marks] [2023]

**Q.4)** What is Integrated Farming System? How is it helpful to small and marginal farmers in India? [250 Words] [15 Marks] [2022]

**Q.5)** What are the present challenges before crop diversification? How do emerging technologies provide opportunity for crop diversification? [250 Words] [15 Marks] [2021]

**Q.6)** How and to what extent would micro irrigation help in solving India's water crisis? [150 Words] [10 Marks] [2021]

**Q.7)** What are the main constraints in transport and marketing of agricultural produce in India? [150 Words] [10 Marks] [2020]

**Q.8)** What are the major factors responsible for making rice-wheat system a success? In spite of this success how has this system become bane in India? [250 Words] [15 Marks] [2020]

- Q.9)** Suggest measures to improve water storage and irrigation system to make its judicious use under depleting scenario. [250 Words] [15 Marks] [2020]
- Q.10)** How far is Integrated Farming System (IFS) helpful in sustaining agricultural production? [150 Words] [10 Marks] [2019]
- Q.11)** Elaborate the impact of National Watershed Project in increasing agricultural production from water-stressed areas. [150 Words] [10 Marks] [2019]
- Q.12)** How has the emphasis on certain crops brought about changes in cropping patterns in recent past? Elaborate the emphasis on millets production and consumption. [250 Words] [15 marks] [2018]
- Q.13)** What are the major reasons for declining rice and wheat yield in the cropping system? How crop diversification is helpful to stabilize the yield of the crop in the system? [250 Words] [15 marks] [2017]
- Q.14)** What is water-use efficiency? Describe the role of micro-irrigation in increasing the water-use efficiency. [200 Words] [12.5 Marks] [2016]
- Q.15)** What is allelopathy? Discuss its role in major cropping systems of irrigated agriculture. [200 Words] [12.5 Marks] [2016]
- Q.16)** In the view of the declining average size of land holdings in India which has made agriculture non-viable for a majority of farmers should contract farming and land leasing be promoted in agriculture? critically evaluate the pros and cons. [200 Words] [12.5 Marks] [2015]

**Topic: Issues related to direct and indirect farm subsidies and minimum support prices; Public Distribution System-objectives, functioning, limitations, revamping; issues of buffer stocks and food security; Technology missions; economics of animal-rearing;**

- Q.1)** What are the major challenges of Public Distribution System (PDS) in India? How can it be made effective and transparent? [150 Words] [10 Marks] [2022]
- Q.2)** What are the salient features of the National Food Security Act 2013? How has the Food security Bill helped in eliminating hunger and malnutrition in India? [250 Words] [15 Marks] [2021]

- Q.3)** What are the reformative steps taken by the Government to make food grain distribution system more effective? [250 Words] [15 marks] [2019]
- Q.4)** What do you mean by Minimum Support Price (MSP)? How will MSP rescue the farmers from the low-income trap? [150 Words] [10 Marks] [2018]
- Q.4)** Assess the role of National Horticulture Mission (NHM) in boosting the production, productivity and income of horticulture farms. How far has it succeeded in increasing the income of farmers? [250 Words] [15 marks] [2018]
- Q.5)** Explain various types of revolutions, took place in Agriculture after Independence in India. How these revolutions have helped in poverty alleviation and food security in India? [150 Words] [10 Marks] [2017]
- Q.6)** How do subsidies affect the cropping pattern, crop diversity and economy of farmers? What is the significance of crop insurance, minimum support price and food processing for small and marginal farmers? [250 Words] [15 marks] [2017]
- Q.7)** Give the vulnerability of Indian agriculture to vagaries of nature, discuss the need for crop insurance and bring out the salient features of the Pradhan Mantri Fasal Bima Yojana (PMFBY). [200 Words] [12.5 Marks] [2016]
- Q.8)** Livestock rearing has a big potential for providing non-farm employment and income in rural areas. Discuss suggesting suitable measures to promote this sector in India. [200 Words] [12.5 Marks] [2015]
- Q.9)** How can the Digital India program help farmers to improve farm productivity and income? What step has the government taken in this regard? [200 Words] [12.5 Marks] [2015]
- Q.10)** In what way could replacement of price subsidy with direct benefit Transfer (DBT) change the scenario of subsidies in India? Discuss. [200 Words] [12.5 Marks] [2015]
- Q.11)** There is also a point of view that Agricultural Produce Market Committees [APMCs] set up under the State Acts have not only impeded the development of agriculture but also have been the cause of food inflation in India. Critically examine. [200 Words] [12.5 Marks] [2014]

**Q.12)**“In the villages itself no form of credit organization will be suitable except the cooperative society.”–All India Rural Credit Survey. Discuss this statement in the background of agricultural finance in India. What constraints and challenges do financial institutions supplying agricultural finance face? How can technology be used to better reach and serve rural clients? [200 Words] [12.5 Marks] [2014]

**Q.13)**What are the different types of agriculture subsidies given to farmers at the national and at state levels? Critically analyse the agricultural subsidy regime with reference to the distortions created by it. [200 Words] [10 Marks] [2013]

**Q.14)**India needs to strengthen measures to promote the pink revolution in food industry for ensuring better nutrition and health. Critically elucidate the statement. [200 Words] [10 Marks] [2013]

**Topic: Food processing and related industries in India-scope' and significance, location, upstream and downstream requirements, supply chain management.**

**Q.1)** Elaborate the scope and significance of the food processing industry in India. [150 Words] [10 Marks] [2022]

**Q.2)** What are the main bottlenecks in upstream and downstream process of marketing of agricultural products in India? [ 250 Words] [15 Marks] [2022]

**Q.3)** What are the challenges and opportunities of food processing sector in the country? How can income of the farmers be substantially increased by encouraging food processing? [150 Words] [10 Marks] [2020]

**Q.4)** Elaborate the policy taken by the Government of India to meet the challenges of the food processing sector? [250 Words] [15 marks] [2019]

**Q.5)** Examine the role of supermarkets in supply chain management of fruits, vegetables and food items. How do they eliminate number of intermediaries? [150 Words] [10 Marks] [2018]

**Q.6)** What are the reasons for poor acceptance of cost-effective small processing unit? How the food processing unit will be helpful to uplift the socio-economic status of poor farmers? [150 Words] [10 Marks] [2017]



Q.7) What are the impediments in marketing and supply chain management in developing the food processing industry in India? Can e-commerce help in overcoming this bottleneck? [200 Words] [12.5 Marks] [2015]

***Topic: Land reforms in India:***

Q.1) State the objectives and measures of land reforms in India. Discuss how land ceiling policy on landholding can be considered as an effective reform under economic criteria. [150 Words] [10 Marks] [2023]

Q.2) How did land reforms in some parts of the country help to improve the socio-economic conditions of marginal and small farmers. [150 Words] [10 Marks] [2021]

Q.3) Discuss the role of land reforms in agricultural development. Identify the factors that were responsible for the success of land reforms in India. [200 Words] [12.5 Marks] [2016]

Q.4) The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 has come into effect from 1<sup>st</sup> January, 2014. What are the key issues which would get addressed with the Act in place? What implications would it have on industrialization and agriculture in India? [200 Words] [12.5 Marks] [2014]

Q.5) Establish relationship between land reforms, agricultural productivity and elimination of poverty in the Indian economy. Discuss the difficulties in designing and implementation of agriculture-friendly land reforms in India. [200 Words] [10 Marks] [2013]

***Topic: Effects of liberalization on the economy, changes in industrial policy and their effects on industrial growth.***

Q.1) Account for the failure of manufacturing sector in achieving the goal of labour-intensive exports rather than capital-intensive exports. Suggest measures for more labour-intensive rather than capital-intensive exports. [150 Words] [10 Marks] [2017]

Q.2) "Industrial growth rate has lagged behind in the overall growth of Gross-Domestic-Product (GDP) in the post-reform period" Give reasons. How far the recent changes in Industrial Policy are capable of increasing the industrial growth rate? [250 Words] [15 marks] [2017]

**Q.3)** “Success of make in India program depends on the success of Skill India programme and radical labour reforms.” Discuss with logical arguments. [200 Words] [12.5 Marks] [2015]

**Q.4)** There is a clear acknowledgement that Special Economic Zones (SEZs) are a tool of industrial development, manufacturing and exports. Recognising this potential, the whole instrumentality of SEZs require augmentation. Discuss the issue plaguing the success of SEZs with respect to taxation, governing laws and administration. [200 Words] [12.5 Marks] [2015]

**Q.5)** Examine the impact of liberalization on companies owned by Indians. Are they competing with the MNCs satisfactorily? Discuss. [200 Words] [10 Marks] [2013]

**Topic: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.**

**Q.1)** Do you think India will meet 50 percent of its energy needs from renewable energy by 2030? Justify your answer. How will the shift of subsidies from fossil fuels to renewable help achieve the above objective? Explain. [250 words] [15 Marks] [2022]

**Q.2)** “Investment in infrastructure is essential for more rapid and inclusive economic growth.” Discuss in the light of India’s experience. [250 Words] [15 Marks] [2021]

**Q.3)** Give an account of the current status and the targets to be achieved pertaining to renewable energy sources in the country. Discuss in brief the importance of National Programme on Light Emitting diodes (LEDs). [200 Words] [12.5 Marks] [2016]

**Q.4)** To what factors can be the recent dramatic fall in equipment cost and tariff of solar energy be attributed? What implications does the trend have for thermal power producers and related industry? [200 Words] [12.5 Marks] [2015]

**Q.5)** National Urban Transport Policy emphasises on ‘moving people’ instead of ‘moving vehicles. Discuss critically the success of the various strategies of the Government in this regard. [200 Words] [12.5 Marks] [2014]

**Q.6)** Write a note on India’s green energy corridor to alleviate the problem of conventional energy. [200 Words] [10 Marks] [2013]

**Topic: Investment models**

- Q.1)** Why is Public Private Partnership (PPP) required in infrastructural projects? Examine the role of PPP model in the redevelopment of Railway Stations in India. [150 Words] [10 Marks] [2022]
- Q.2)** Explain the meaning of investment in an economy in terms of capital formation. Discuss the factors to be considered while designing a concession agreement between a public entity and a private entity. [250 Words] [15 Marks] [2020]
- Q.3)** Examine the developments of Airports in India through Joint Ventures under Public-Private Partnership (PPP) model. What are the challenges faced by the authorities in this regard. [150 Words] [10 Marks] [2017]
- Q.4)** Explain how Private Public Partnership arrangements, in long gestation infrastructure projects, can transfer unsustainable liabilities to the future. What arrangements need to be put in place to ensure that successive generations 'capacities are not compromised? [200 Words] [12.5 Marks] [2014]
- Q.5)** Foreign Direct Investment (FDI) in the defence sector is now set to be liberalized: What in fluence this is expected to have on Indian defence and economy in the short and long run? [200 Words] [12.5 Marks] [2014]
- Q.6)** Discuss the impact of FDI entry into multi-trade retail sector on supply chain management in commodity trade pattern of the economy. [100 Words] [5 Marks] [2013]
- Q.7)** Though India allowed Foreign Direct Investment (FDI) in what is called multi-brand retail through the joint venture route in September 2012, the FDI, even after a year, has not picked up. Discuss the reasons. [100 Words] [5 Marks] [2013]
- Q.8)** Adoption of PPP model for infrastructure development of the country has not been free of criticism. Critically discuss the pros and cons of the model. [200 Words] [10 Marks] [2013]

## ENVIRONMENT AND ECOLOGY

- Q.1)** What is oil pollution? What are its impacts on the marine ecosystem? In what way is oil pollution particularly harmful for a country like India? [150 Words] [10 Marks] [2023]
- Q.2)** The adoption of electric vehicles is rapidly growing worldwide. How do electric vehicles contribute to reducing carbon emissions and what are the key benefits they offer compared to traditional combustion engine vehicles? [250 Words] [15 Marks] [2023]
- Q.3)** Comment on the National Wetland Conservation Programme initiated by the Government of India and name a few India's wetlands of international importance included in the Ramsar Sites. [250 Words] [15 Marks] [2023]
- Q.4)** The Intergovernmental Panel on Climate Change (IPCC) has predicted a global sea level rise of about one metre by AD 2100. What would be its impact in India and the other countries in the Indian Ocean region? [250 Words] [15 Marks] [2023]
- Q.5)** Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gases which cause global warming, in the light of the Kyoto Protocol, 1997. [250 Words] [15 Marks] [2022]
- Q.6)** Discuss in detail the photo chemical smog emphasizing its formation, effects and mitigation. Explain the 1999 Gothenburg Protocol. [150 Words] [10 Marks] [2022]
- Q.7)** Describe the major outcomes of the 26th session of the Conference of Parties (COP) to the United Nations Framework Convention on climate change (UNFCCC). What are the commitments made by India in this conference? [250 Words] [15 Marks] [2021]
- Q.8)** Describe the key points of the revised Global Air Quality Guidelines (AQGs) recently released by the World Health Organisation (WHO). How are these different from its last update in 2005? What changes in India's National Clean Air Programme are required to achieve these revised standards? [150 Words] [10 Marks] [2021]
- Q.9)** Explain the purpose of the Green Grid Initiative launched at World Leaders Summit of the COP26UN Climate Change Conference in Glasgow in November,2021. When was this idea first floated in the International Solar Alliance (ISA)? [150 Words] [10 Marks] [2021]



- Q.10)**How does the draft Environment Impact Assessment (EIA) Notification, 2020 differ from the existing EIA Notification, 2006? [150 Words] [10 Marks] [2020]
- Q.11)**What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? [150 Words] [10 Marks] [2020]
- Q.12)**What are the key features of the National Clean Air Programme (NCAP) initiated by the Government of India? [250 Words] [15 Marks] [2020]
- Q.13)**Coastal sand mining, whether legal or illegal, poses one of the biggest threats to our environment. Analyze the impact of sand mining along the Indians coasts, citing specific examples. [150 Words] [10 Marks] [2019]
- Q.14)**Define the concept of carrying capacity of an ecosystem as relevant to an environment. Explain how understanding this concept is vital while planning for sustainable development of a region. [250 Words] [15 marks] [2019]
- Q.15)**What are the impediments in disposing the huge quantities of discarded solid wastes which are continuously being generated? How do we remove safely the toxic wastes that have been accumulating in our habitable environment? [150 Words] [10 Marks] [2018]
- Q.16)**What is wetland? Explain the Ramsar concept of 'wise use' in the context of wetland conservation. Cite two examples of Ramsar sites from India. [150 Words] [10 Marks] [2018]
- Q.17)**Sikkim is the first 'Organic State' in India. What are the ecological and economic benefits of Organic State? [150 Words] [10 Marks] [2018]
- Q.18)** How does biodiversity vary in India? How is the Biological Diversity Act,2002 helpful in conservation of flora and fauna? [250 Words] [15 marks] [2018]
- Q.19)**Not many years ago, river linking was a concept but it is becoming reality in the country. Discuss the advantages of river linking and its possible impact on the environment. [150 Words] [10 Marks] [2017]
- Q.20)**'Climate Change' is a global problem. How India will be affected by climate change? How Himalayan and coastal states of India will be affected by climate change? [250 Words] [15 marks] [2017]

**Q.21)**Rehabilitation of human settlements is one of the important environmental impacts which always attracts controversy while planning major projects. Discuss the measures suggested from mitigation of this impact while proposing major developmental projects.

[200 Words] [12.5 Marks] [2016]

**Q.22)**Discuss the Namami Gange and National Mission for Clean Ganga (NMCG) programmes and causes of mixed results from the previous schemes. What quantum leaps can help preserve the river Ganga better than incremental inputs? [200 Words]

[12.5 Marks] [2015]

**Q.23)**Should the pursuit of carbon credits and clean development mechanisms set up under UNFCCC be maintained even though there has been a massive slide in the value of a carbon credit? Discuss with respect to India's energy needs for economic growth. [200

Words] [12.5 Marks] [2014]

**Q.24)**Environmental Impact Assessment studies are increasingly undertaken before a project is cleared by the Government. Discuss the environmental impacts of coal-fired thermal plants located at coal pitheads. [200 Words] [12.5 Marks] [2014]

**Q.25)**What are the consequences of Illegal mining? Discuss the Ministry of Environment and Forest's concept of GO AND NO-GO zones for coal mining sector. [200 Words] [10 Marks] [2013]

**Q.26)**Enumerate the National Water Policy of India. Taking river Ganges as an example, discuss the strategies which may be adopted for river water pollution control and management. What are the legal provisions of management and handling of hazardous wastes in India? [200 Words] [10 Marks] [2013]

### SCIENCE AND TECHNOLOGY

**Topic: Science and Technology-developments and their applications and effects in everyday life**

**Q.1)** The increase in life expectancy in the country has led to newer health challenges in the community. What are those challenges and what steps need to be taken to meet them?

[150 Words] [10 Marks] [2022]

- Q.2)** Each year a large amount of plant material, cellulose, is deposited on the surface of Planet Earth. What are the natural processes this cellulose undergoes before yielding carbon dioxide, water and other end products? [150 Words] [10 Marks] [2022]
- Q.3)** The Nobel Prize in Physics of 2014 was jointly awarded to Akasaki, Amano and Nakamura for the invention of Blue LEDs in 1990s. How has this invention impacted the everyday life of human beings? [250 Words] [15 Marks] [2021]
- Q.4)** How is S-400 air defence system technically superior to any other system presently available in the world? [150 Words] [10 Marks] [2021]
- Q.5)** How is science interwoven deeply with our lives? What are the striking changes in agriculture triggered off by the science-based technologies? [150 Words] [10 Marks] [2020]
- Q.6)** COVID-19 pandemic has caused unprecedented devastation worldwide. However, technological advancements are being availed readily to win over the crisis. Give an account of how technology was sought to aid management of the pandemic. [250 Words] [15 Marks] [2020]
- Q.7)** Describe the benefits of deriving electric energy from sunlight in contrast to the conventional energy generation. What are the initiatives offered by our government for this purpose? [250 Words] [15 Marks] [2021]
- Q.8)** With growing energy needs should India keep on expanding its nuclear energy programme? Discuss the facts and fears associated with nuclear energy. [250 Words] [15 marks] [2018]
- Q.9)** Stem cell therapy is gaining popularity in India to treat a wide variety of medical conditions including leukaemia, Thalassemia, damaged cornea and several burns. Describe briefly what stem cell therapy is and what advantages it has over other treatments? [150 Words] [10 Marks] [2017]
- Q.10)** Give an account of the growth and development of nuclear science and technology in India. What is the advantage of fast breeder reactor programme in India? [250 Words] [15 marks] [2017]

- Q.11)**India's Traditional Knowledge Digital Library (TKDL) which has a database containing formatted information on more than 2 million medicinal formulations is proving a powerful weapon in country's fight against erroneous patents. Discuss the pro and cons of making the data base available publicly available under open-source licensing. [200 Words] [12.5 Marks] [2015]
- Q.12)**Scientific research in Indian universities is declining, because a career in science is not as attractive as are business professions, engineering or administration, and the universities are becoming consumer-oriented. Critically comment. [200 Words] [12.5 Marks] [2014]
- Q.13)**Can overuse and free availability of antibiotics without Doctor's prescription, be contributors to the emergence of drug-resistant diseases in India? What are the available mechanisms for monitoring and control? Critically discuss the various issues involved. [200 Words] [12.5 Marks] [2014]
- Q.14)**What do you understand by Fixed Dose drug Combinations (FDCs)? Discuss their merits and demerits. [200 Words] [10 Marks] [2013]
- Q.15)**What do you understand by Umpire Decision Review System in cricket? Discuss its various components. Explain how silicone tape on the edge of a bat may fool the system? [200 Words] [10 Marks] [2013]
- Q.16)**What is a digital signature? What does its authentication mean? Give various salient built-in features of a digital signature. [100 Words] [5 Marks] [2013]
- Q.17)**How does the 3D printing technology work? List out the advantages and disadvantages of the technology. [100 Words] [5 Marks] [2013]
- Q.18)**What is an FRP composite material? How are they manufactured? Discuss their application in aviation and automobile industries. [100 Words] [5 Marks] [2013]
- Q.19)**What do you understand by Run-of-river hydroelectricity project? How is it different from any other hydroelectricity project? [100 Words] [5 Marks] [2013]



**Topic: Achievements of Indians in science & technology; indignation of technology and developing new technology.**

- Q.1)** Discuss several ways in which microorganisms can help in meeting the current fuel shortage. [150 Words] [10 Marks] [2023]
- Q.2)** Launched on 25th December, 2021, James Webb Space Telescope has been much in the news since then. What are its unique features which make it superior to its predecessor Space Telescopes? What are the key goals of this mission? What potential benefits does it hold for the human race? [250 words] [15Marks] [2022]
- Q.3)** How was India benefited from the contributions of Sir M. Visvesvaraya and Dr. M. S. Swaminathan in the fields of water engineering and agricultural science respectively? [150 Words] [10 Marks] [2019]
- Q.4)** Discuss the work of 'Bose-Einstein Statistics' done by Prof. Satyendra Nath Bose and show how it revolutionized the field of Physics. [150 Words] [10 Marks] [2018]
- Q.5)** Discuss India's achievements in the field of Space Science and Technology. How the application of this technology has helped India in its socio-economic development? [200 Words] [12.5 Marks] [2016]

**Topic: Awareness in the fields of IT, Space, Computers, robotics, nano-technology, biotechnology and issues relating to intellectual property rights.**

- Q.1)** What is the main task of India's third moon mission which could not be achieved in its earlier mission? List the countries that have achieved this task. Introduce the subsystems in the spacecraft launched and explain the role of the Virtual Launch Control Centre' at the Vikram Sarabhai Space Centre which contributed to the successful launch from Sriharikota. [250 Words] [15 Marks] [2023]
- Q.2)** Introduce the concept of Artificial Intelligence (AI). How does AI help clinical diagnosis? Do you perceive any threat to privacy of the individual in the use of AI in healthcare? [150 Words] [10 Marks] [2023]
- Q.3)** What is the basic principle behind vaccine development? How do vaccines work? What approaches were adopted by the Indian vaccine manufacturers to produce COVID-19 vaccines? [250 words] [15 Marks] [2022]

- Q.4)** What are the research and developmental achievements in applied biotechnology? How will these achievements help to uplift the poorer sections of the society? [250 Words] [15 Marks] [2021]
- Q.5)** What do you understand by nanotechnology and how is it helping in health sector?[150 Words] [10 Marks] [2020]
- Q.6)** What is India's plan to have its own space station and how will it benefit our space programme? [150 Words] [10 Marks] [2019]
- Q.7)** How is the Government of India protecting traditional knowledge of medicine from patenting by pharmaceutical companies? [250 Words] [15 marks] [2019]
- Q.8)** How can biotechnology help to improve the living standards of farmers? [250 Words] [15 marks] [2019]
- Q.9)** Why is there so much activity in the field of biotechnology in our country? How has this activity benefited the field of bio pharma? [250 Words] [15 marks] [2018]
- Q.10)** India has achieved remarkable successes in unmanned space missions including the Chandrayaan and Mars Orbiter Mission, but has not ventured into manned space mission, both in terms of technology and logistics? Explain critically. [150 Words] [10 Marks] [2017]
- Q.11)** Why is nanotechnology one of the key technologies of the 21st century? Describe the salient features of India Government's Mission on Nan science and Technology and the scope of its application in the development process of the country. [200 Words] [12.5 Marks] [2016]
- Q.12)** What do you understand by "Standard Positioning System" and "Precision positioning system" in the GPS era? Discuss the advantage India perceives from its ambitious IRNSS programme employing just seven satellites. [200 Words] [12.5 Marks] [2015]
- Q.13)** What are the areas of prohibitive labour that can be sustainably managed by robots? Discuss the initiatives that can propel the research in premier research institutes for substantive and gainful innovation. [200 Words] [12.5 Marks] [2015]

- Q.14)** Discuss the advantage and security implication of cloud hosting of servers vis-a-vis in house machine-based hosting for government business. [200 Words] [12.5 Marks] [2015]
- Q.15)** In a globalized world, Intellectual Property Rights assume significance and are a source of litigation. Broadly distinguish between the terms—Copyrights, Patents and Trade Secrets. [200 Words] [12.5 Marks] [2014]
- Q.16)** Bringing out the circumstances in 2005 which forced amendment to the section 3(d) in Indian Patent Law, 1970, discuss how it has been utilized by the Supreme Court in its judgement in rejecting Novartis' patent application for 'Glivec'. Discuss briefly the pros and cons of the decision. [200 Words] [10 Marks] [2013]

#### DISASTER MANAGEMENT

- Q.1)** Dam failures are always catastrophic, especially on the downstream side, resulting in a colossal loss of life and property. Analyse the various causes of dam failures. Give two examples of large dam failures. [150 Words] [10 Marks] [2023]
- Q.2)** Explain the mechanism and occurrence of cloudburst in the context of the Indian subcontinent. Discuss two recent examples. [150 Words] [10 Marks] [2022]
- Q.3)** Explain the causes and effects of coastal erosion in India. What are the available coastal management techniques for combating the hazard? [250 words] [15 Marks] [2022]
- Q.4)** Describe the various causes and the effects of landslides. Mention components of the important components of National Landslide Risk Management strategy. [250 Words] [15 Marks] [2021]
- Q.5)** Discuss about the vulnerability of India to earthquake related hazards. Give examples including the salient features of major disasters caused by earthquakes in different parts of India during the last three decades. [150 Words] [10 Marks] [2021]
- Q.6)** Discuss the recent measures initiated in disaster management by the Government of India departing from the earlier reactive approach. [250 Words] [15 Marks] [2020]

- Q.7)** Vulnerability is an essential element for defining disaster impacts and its threat to people. How and in what ways can vulnerability to disasters be characterized? Discuss different types of vulnerability with reference to disasters. [150 Words] [10 Marks] [2019]
- Q.8)** Disaster preparedness is the first step in any disaster management process. Explain how hazard zonation mapping will help disaster mitigation in the case of landslides. [250 Words] [15 marks] [2019]
- Q.9)** Describe various measures taken in India for Disaster Risk Reduction (DRR) before and after signing 'Sendai Framework for DRR (2015-2030)'. How is this framework different from 'Hyogo Framework for Action, 2005'? [250 Words] [15 marks] [2018]
- Q.10)** On December 2004, tsunami brought havoc on 14 countries including India. Discuss the factors responsible for occurrence of Tsunami and its effects on life and economy. In the light of guidelines of NDMA (2010) describe the mechanisms for preparedness to reduce the risk during such events. [250 Words] [15 marks] [2017]
- Q.11)** The frequency of urban floods due to high intensity rainfall is increasing over the years. Discussing the reasons for urban floods, highlight the mechanisms for preparedness to reduce the risk during such events. [200 Words] [12.5 Marks] [2016]
- Q.12)** With reference to National Disaster Management Authority (NDMA) guidelines, discuss the measures to be adopted to mitigate the impact of the recent incidents of cloudbursts in many places of Uttarakhand. [200 Words] [12.5 Marks] [2016]
- Q.13)** The frequency of earthquakes appears to have increased in the Indian subcontinent. However, India's preparedness for mitigating their impact has significant gaps. Discuss various aspects. [200 Words] [12.5 Marks] [2015]
- Q.14)** Drought has been recognized as a disaster in view of its spatial expanse, temporal duration, slow onset and lasting effects on vulnerable sections. With a focus on the September 2010 guidelines from the National Disaster Management Authority (NDMA), discuss the mechanisms for preparedness to deal with likely El Nino and La Nina fall outs in India. [200 Words] [12.5 Marks] [2014]



**Q.15)**How important are vulnerability and risk assessment for pre-disaster management? As an administrator, what are key areas that you would focus on in a Disaster Management System? [200 Words] [10 Marks] [2013]

### INTERNAL SECURITY

**Topic: Linkages between development and spread of extremism.**

- Q.1)** Winning of 'Hearts and Minds' in terrorism-affected areas is an essential step in restoring the trust of the population. Discuss the measures adopted by the Government in this respect as part of the conflict resolution in Jammu and Kashmir. [150 Words] [10 Marks] [2023]
- Q.2)** Naxalism is a social, economic and developmental issue manifesting as a violent internal security threat. In this context, discuss the emerging issues gets a multilayered strategy to tackle the menace of Naxalism. [250 words] [15 Marks] [2022]
- Q.3)** What are the determinants of left-wing extremism in Eastern part of India? What strategy should Government of India, civil administration and security forces adopt to counter the threat in the affected areas? [250 Words] [15 Marks] [2020]
- Q.4)** Left Wing Extremism (LWE) is showing a downward trend, but still affects many parts of the country. Briefly explain the Government of India's approach to counter the challenges posed by LWE. [150 Words] [10 Marks] [2018]
- Q.5)** Mob violence is emerging as a serious law and order problem in India. By giving suitable examples, analyze the causes and consequences of such violence. [250 Words] [15 marks] [2017]
- Q.6)** The persisting drives of the government for development of large industries in backward area shave resulted in isolating the tribal population and the farmers who face multiple displacements. With Malkangiri and Naxalbari foci, discuss the corrective strategies needed to win the Left-Wing Extremism (LWE) doctrine affected citizens back into mainstream of social and economic growth. [200 Words] [12.5 Marks] [2015]
- Q.7)** Article 244 of the Indian Constitution relates to administration of schedules area and tribal areas. Analyse the impact of non-implementation of the provisions of the Fifth schedule on the growth of Left-Wing extremism. [200 Words] [10 Marks] [2013]

***Topic: Role of external state and non-state actors in creating challenges to internal security:***

- Q.1)** The use of unmanned aerial vehicles (UAVs) by our adversaries across the borders to ferry arms/ammunitions, drugs, etc., is a serious threat to the internal security. Comment on the measures being taken to tackle this threat. [150 Words] [10 Marks] [2023]
- Q.2)** Analyse the multidimensional challenges posed by external state and non-state actors, to the internal security of India. Also discuss measures required to be taken to combat these threats. [250 Words] [15 Marks] [2021]
- Q.3)** The banning of 'Jammat-e-Islami' in Jammu and Kashmir brought into focus the role of over-ground workers (OGWs) in assisting terrorist organizations. Examine the role played by OGWs in assisting terrorist organizations in insurgency affected areas. Discuss measures to neutralize influence of OGWs. [150 Words] [10 Marks] [2019]
- Q.4)** The China Pakistan Economic Corridor (CPEC) is viewed as a cardinal subset of China's larger 'One Belt One Road' initiative. Give a brief description of CPEC and enumerate the reasons why India has distanced itself from the same. [150 Words] [10 Marks] [2018]
- Q.5)** The north-eastern region of India has been infested with insurgency for a very long time. Analyze the major reasons for the survival of armed insurgency in this region. [150 Words] [10 Marks] [2017]
- Q.6)** "The diverse nature of India as a multi-religious and multi-ethnic society is not immune to the impact of radicalism which is seen in her neighbourhood? Discuss along with strategies to be adopted to counter this environment. [200 Words] [12.5 Marks] [2014]
- Q.7)** International civil aviation laws provide all countries complete and exclusive sovereignty over the airspace above their territory. What do you understand by 'airspace' What are the implications of these laws on the space above this airspace? Discuss the challenges which this poses and suggest ways to contain the threat. [200 Words] [12.5 Marks] [2014]
- Q.8)** In 2012, the longitudinal marking for high-risk areas for piracy was moved from 65 degrees east to 78 degrees east in the Arabian Sea by the International Maritime Organisation. What impact does this have on India's maritime security concerns? [200 Words] [12.5 Marks] [2014]

***Topic: Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention:***

- Q.1)** What are the internal security challenges being faced by India? Give out the role of Central Intelligence and Investigative Agencies tasked to counter such threats. [250 words] [15 Marks] [2023]
- Q.2)** What are the maritime security challenges in India? Discuss the organisational, technical and procedural initiatives taken to improve the maritime security. [150 Words] [10 Marks] [2022]
- Q.3)** What are the different elements of cyber security? Keeping in view the challenges in cyber security, examine the extent to which India has successfully developed a comprehensive National Cyber Security Strategy. [250 Words] [15 Marks] [2022]
- Q.4)** Keeping in view India's internal security, analyse the impact of cross border cyber-attacks. Also discuss defensive measures against these sophisticated attacks. [150 Words] [10 Marks] [2021]
- Q.5)** Discuss how emerging technologies and globalization contribute to money laundering. Elaborate measures to tackle the problem of money laundering both at national and international levels. [150 Words] [10 Marks] [2021]
- Q.6)** Discuss different types of cybercrimes and measures required to be taken to fight the menace. [150 Words] [10 Marks] [2020]
- Q.7)** What is Cyber Dome Project? Explain how it can be useful in controlling internet crimes in India. [150 Words] [10 Marks] [2019]
- Q.8)** Data security has assumed significant importance in the digitized world due to rising cyber-crimes. The Justice B. N. Sri Krishna Committee Report addresses issues related to data security. What, in your view, are the strengths and weaknesses of the Report relating to protection of personal data in cyber space? [250 Words] [15 marks] [2018]
- Q.9)** Discuss the potential threats of Cyber-attack and the security framework to prevent it. [150 Words] [10 Marks] [2017]

**Q.10)**The scourge of terrorism is a grave challenge to national security. What solutions do you suggest to curb this growing menace? What are the major sources of terrorist funding?  
[250 Words] [15 marks] [2017]

**Q.11)**Use of internet and social media by non-state actors for subversive activities is a major security concern. How have these been misused in the recent past? Suggest Effective guidelines to curb the above threat. [200 Words] [12.5 Marks] [2016]

**Q.12)**Religious indoctrination via social media has resulted in Indian youth joining the ISIS. What is ISIS and its mission? How can ISIS be dangerous to the internal security of our country. [200 Words] [12.5 Marks] [2015]

**Q.13)**Considering the threats cyberspace poses for the country, India needs a “Digital Armed Forces” to prevent crimes. Critically evaluate the National Cyber Security Policy, 2013 outlining the challenges perceived in its effective implementation. [200 Words] [12.5 Marks] [2015]

**Q.14)**Money laundering poses a serious security threat to a country’s economic sovereignty. What is its significance for India and what steps are required to be taken to control this menace? [200 Words] [10 Marks] [2013]

**Q.15)**What are social networking sites and what security implications do these sites present?  
[200 Words] [10 Marks] [2013]

**Q.16)**Cyber warfare is considered by some defence analysts to be a larger threat than even Al Qaeda or terrorism. What do you understand by Cyber warfare? Outline the cyber threats which India is vulnerable to and bring out the state of the country’s preparedness to deal with the same. [200 Words] [10 Marks] [2013]

***Topic: Security challenges and their management in border areas–linkages of organized crime with terrorism.***

**Q.1)** Discuss the types of organized crimes. Describe the linkages between terrorists and organized crime that exist at the national and transnational levels. [150 Words] [10 Marks] [2022]



- Q.2)** Analyse the complexity and intensity of terrorism, its causes, linkages and obnoxious nexus. Also suggest measures required to be taken to eradicate the menace of terrorism. [250 Words] [15 Marks] [2021]
- Q.3)** For effective border area management, discuss the steps required to be taken to deny local support to militants and also suggest ways to manage favourable perception among locals. [150 Words] [10 Marks] [2020]
- Q.4)** Analyze internal security threats and trans-border crimes along Myanmar, Bangladesh and Pakistan borders including Line of Control (LoC). Also discuss the role played by various security forces in this regard. [250 Words] [15 Marks] [2020]
- Q.5)** Cross-Border movement of insurgents is only one of the several security challenges facing the policing of the border in North-East India. Examine the various challenges currently emanating across the India-Myanmar border. Also, discuss the steps to counter the challenges. [250 Words] [15 marks] [2019]
- Q.6)** India's proximity to two of the world's biggest illicit opium-growing states has enhanced her internal security concerns. Explain the linkages between drug trafficking and other illicit activities such as gunrunning, money laundering and human trafficking. What countermeasures should be taken to prevent the same? [250 Words] [15 marks] [2018]
- Q.7)** The terms 'Hot Pursuit' and 'Surgical Strikes' are often used in connection with armed action against terrorist attacks. Discuss the strategic impact of such actions. [200 Words] [12.5 Marks] [2016]
- Q.8)** "Terrorism is emerging as a competitive industry over the last few decades." Analyze the above statement. [200 Words] [12.5 Marks] [2016]
- Q.9)** Border management is a complex task due to difficult terrain and hostile relations with some countries. Elucidate the challenges and strategies for effective border management. [200 Words] [12.5 Marks] [2016]
- Q.10)** How does illegal trans-border migration pose a threat to India's security? Discuss the strategies to curb this, bringing out the factors which give impetus to such migration. [200 Words] [12.5 Marks] [2014]

**Q.11)**China and Pakistan have entered into an agreement for development of an economic corridor. What threat does this pose for India's security? Critically examine. [200 Words] [12.5 Marks] [2014]

**Q.12)**How far are India's internal security challenges linked with border management particularly in view of the long porous borders with most countries of South Asia and Myanmar? [200 Words] [10 Marks] [2013]

**Topic: Various Security forces and agencies and their mandate.**

**Q.1)** Give out the major sources of terror funding in India and the efforts being made to curtail these sources. In the light of this, also discuss the aim and objective of the No Money for Terror (NMPT Conference recently held at New Delhi in November 2022. [250 words] [15 Marks] [2023]

**Q.2)** Indian Government has recently strengthened the anti-terrorism laws by amending the unlawful Activities (Prevention) Act (UAPA), 1967 and the NIA act. Analyze the changes in the context of prevailing security environment while discussing the scope and reasons for opposing the UAPA by human rights organizations. [250 Words] [15 marks] [2019]

**Q.3)** Human right activists constantly highlight the fact that the Armed forces (Special Powers) Act, 1958 (AFSPA) is a draconian act leading to cases of human right abuses by security forces. What sections of AFSPA are opposed by the activists. Critically evaluate the requirement with reference to the view held by Apex Court. [200 Words] [12.5 Marks] [2015]