

Civil Services (Main) Examination-2009

Solved Cum Study Notes Model Paper (General Studies)



We are doing our best to provide you material for IAS main examination. With other topics, model paper cum study notes for GS second paper has been provided in this volume. Model paper cum study notes for GS first paper was already given to you in volume-4. Model cum study notes is new idea, which is more appropriate for understanding and keeping in mind for a long time and reproducing at the examination. In this process the our answers may be long and not followed the word limit. Its objective is to make easy to understand the whole issue and topic with associated facts. So read it carefully and do not forget to follow the word limit in examination hall...

Time Allowed: Three Hours

Maximum Marks: 300

INSTRUCTIONS:

Candidates should attempt all question strictly in accordance with the instructions given under each questions. The number of marks carried by each question is indicated at the end of the question

1. Write notes on any two of the following (answer to each question should be in about 150 words): 2x30=60

(a) Where and when was the meeting between the Prime Ministers of India and Pakistan held in 2009?

What were the main decisions taken and how much it important for initiating the dialogue process with Pakistan?

Why opposition parties are against of it?

- (b) India-France relations
- (c) India and Chile

2. Write about the following (answer to each question should be in about 20 wordS): 2x5= 10

- (a) INS Arihant
- (b) Afghan President Karzai's visit to India
- (c) Indo-Sri Lankan Economic Cooperation
- (d) Strategic Partnership between India and Kazakhstan
- (e) India and Nepal

3. Write about the following (answer to each question should be in about 20 words) : 2x5=10

- (a) Mini Pravasi Bharatiya Divas
- (b) Global Indian Network of Knowledge
- (c) Overseas Indian Facilitation Center (OIFC)
- (d) Overseas Workers Resource Centre (OWRC)
- (e) Indian council of Overseas Employment (ICOE)
- (f) Indian Diaspora in Australia

4. Answer anyone of the following (in about 250 words): 30

- (a) What steps IMF recently has taken to support low-income countries during crisis?
- (b) Discuss the situation of Foreign Direct Investment (FDI) equity inflows in India and government's efforts.

5. Discuss any two of the following topics (answer each question in about 150 words)

- (a). A Challenge fund for Export Promotion Activities
- (b). India and Global Meltdown
- (c). India- MERCOSUR Preferential Trade Agreement

6. Write about the following (answer to each question in about 20 words) : 5x2 = 10

- (a) Structural Adjustment Facility (SAF)
- (b) Rights Accumulation Program (RAP)
- (c) Green Box
- (d) NTMs
- (e). ICSID

7. Write on any one of the following (answer in about 150 words): 15

- (a) BRICS' Joint Statement on Global Food Security
- (b) Ethnic Violence in Xinjiang

8. Briefly write about the following (in about 20 words each): 2x5 = 10

- (a) G-5 and G-14
- (b) Indo-Japan Mutual Trade
- (c) Second World Conference Against Racism
- (d) Lebanese Parliamentary Elections
- (e) India as a political Force in East Asia

9. Write about the following by expanding and explaining the objectives (in about 20 Words each): 2x5=10

- (a) ESCAP
- (b) APEC
- (c) NAM
- (d) BIMSTEC
- (e) INTERPOL

10. Answer any one of the following in about 250 words: 30

- (a). Give the brief account of India's achievements in Space Programme in recent years.
- (b). What are the main uses of nanotechnology and its position in India?

11. Explain any three of the following (in about 150 words each) : 3x15=45

- (a) Quantum Compute.
- (b) Virtually Engineering Power Plants
- (c) Param Sheers Supercomputing facility
- (d) Tele-medicine facility for Rural India

12. Write brief notes on all the five (in about 20 words each) below: 5x2=10

- (a) NAT
- (b) Robotic Therapy
- (c) Induced Pluripotent Stem Cell
- (d) WinZIP
- (e) H1N1

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ANSWERS

Ans. 1. (a)

The Prime Minister of India Dr. Manmohan Singh and the Prime Minister of Pakistan Syed Yusuf Raza Gilani met on July 16, 2009 in the Egyptian resort city of Sharm-el-Sheikh, on the sidelines of the Non-Aligned Movement (NAM) Summit. The two Prime Ministers had a cordial and constructive meeting. They considered the entire gamut of bilateral relations with a view to charting the way forward in India - Pakistan relations. Both leaders agreed that terrorism is the main threat to both countries. Both leaders affirmed their resolve to fight terrorism and to cooperate with each other to this end. Indian Prime Minister reiterated the need to bring the perpetrators of the Mumbai attacks to justice. Prime Minister Gilani assured that Pakistan will do everything in its power in this regard. He said that Pakistan has provided an updated status dossier on the investigations of the Mumbai attacks and had sought additional information/evidence. Prime Minister Singh said that the dossier is being reviewed.

Both leaders agreed that the two countries will share real time, credible and actionable information on any future terrorist threats. Prime Minister Gilani mentioned that Pakistan has some information on threats in Balochistan and other areas. Both Prime Ministers recognised that dialogue is the only way forward. Action on terrorism should not be linked to the Composite Dialogue process and these should not be bracketed. Prime Minister Singh said that India was ready to discuss all issues with Pakistan, including all outstanding issues. Dr Manmohan Singh reiterated India's interest in a stable, democratic, Islamic Republic of Pakistan.

Both leaders agreed that the real challenge is development and the elimination of poverty. They are resolved to eliminate those factors which prevent our countries from realizing their full potential. They agreed to work to create an atmosphere of mutual trust and confidence. Both leaders reaffirmed their intention to promote regional cooperation. Both Foreign Secretaries should meet as often as necessary and report to the two Foreign Ministers who will be meeting on the sidelines of the forthcoming UN General Assembly.

The peace process started in September 2004 and came to a halt after four rounds of talks. Both sides claimed substantial progress on the eight subjects that came under the ambit of the composite dialogue, including Kashmir, Siachen Glacier, confidence-building measures, Sir Creek, Wullar Barrage and terrorism and related subjects. Both sides admit that the dialogue process, which came to a halt yet again, in November 2008, has helped make a lot of progress towards resolving the contentious issues of Sir Creek and Siachen. The two sides resumed the process, which had been suspended following the terror attacks on the Mumbai suburban train network in July 2006, after the Prime Minister met Pakistan's President, Pervez Musharraf, at the NAM Summit in Havana. The joint statement in Havana agreed not to link terrorism concerns to other key issues that were part of the designated composite dialogue process. The statement also announced the creation of an India-Pakistan institutional anti-terror mechanism to identify and implement counter-terrorism measures and initiatives.

While in Pakistan the joint statement was received as a diplomatic victory and Gilani was hailed as a hero, in India Prime Minister Manmohan Singh was blamed for capitulating to Pakistan and has received widespread criticism for the compromises. He came under flak for deviating from India's stated position on terrorism and composite dialogue since Pakistan has not taken any "credible and visible" action against the perpetrators of the 26/11 Mumbai attack. But Dr. Manmohan Singh said few hours after the release of the statement, that the peace talks would remain on hold until Islamabad took action against the perpetrators of the Mumbai attacks. "If acts of terrorism continue to be perpetrated, there is no question of dialogue, let alone a composite dialogue," Manmohan Singh told the Indian media in Sharm-el-Sheikh.

For a proper evaluation of the Joint Statement, the issues involved have to be looked at in a balanced perspective.

tive. Actually India did not give a diplomatic blank cheque to Pakistan either on the “delinking” issue or on the inclusion of Balochistan. Pakistan has already submitted a dossier on action-taken-so-far, however inadequate and half-hearted, against the terrorists involved in the Mumbai attack. The use of Pakistani territory and the involvement of Pakistan nationals have been admitted; the role of the Lashkar-e-Taiba has been acknowledged; five Lashkar operatives have been arrested and would be charge-sheeted, including the commander of the Mumbai attack, Zakiur Rahman Lakhvi. The Inter-Services Intelligence (ISI) chief has been in consultation with Indian High Commission officials in Islamabad on the action being taken in relation to the Mumbai case. To proceed further, Pakistan is seeking more information from India. Delinking in no way means that the composite dialogue would continue irrespective of Pakistan not doing anything regarding the Mumbai case or allowing a similar attack on India again. The joint statement is a political document and not a legally binding, unconditional international commitment.

The criticism from the non-Left opposition parties and the Congress party’s lukewarm reception to the joint statement do not bode well for an early resumption of the dialogue process. Senior Congress functionaries sniped at the Prime Minister for agreeing to sign on to the statement. While the Congress formally supported the Prime Minister’s statement in Parliament, “off-the-record” leaks by senior Congressmen were critical of the alleged concessions given to Pakistan.

The Bharatiya Janata Party was strident in its criticism of the Sharm-el-Sheikh statement just as it was of the Havana statement. Leader of the Opposition L.K. Advani was among the most vociferous critics of the Sharm-el-Sheikh statement. He led a walkout of BJP members in Parliament after describing the statement as “capitulation”. He later said the statement evoked “intense disquiet and concern among all thinking Indians, including sections of the Congress party”. He accused the Prime Minister of having surrendered India’s “diplomatic advantage over Pakistan” by delinking acts of terrorism from the composite dialogue process and the mention of the “Balochistan” issue.

Ans 1 (b)

Indian Prime Minister Manmohan Singh was chief guest on the occasion of Bastille Day march on July 14, 2009. On this day a detachment of 400 Indian soldiers proudly led the Bastille Day parade on the Champs-Élysées. Indian soldiers to participate in the Bastille Day march for the first time, French President Nicolas Sarkozy wanted to emphasize France's special relationship with India. Sarkozy is keen to help India elevate its role on the international scene by endorsing its candidacy to become a permanent member of the U.N. Security Council. He has bullishly asserted the need for expanding the G8 to the G14 by inviting emerging powers like India to join the elite club, and giving them a greater role in setting the global economic and geopolitical agenda.

France enjoys a longstanding relationship with India. In the midst of the 18th century, the French Empire was close to conquering the entire subcontinent when Governor Dupleix was called back to France by the Compagnie des Indes (which had established a trade presence in India well ahead of its British rival, the East India Company).

France is keen to have full civil nuclear cooperation, including transfer of enrichment and reprocessing technology, with India, notwithstanding the G-8 declaration which vows to curb sharing of such knowhow with non-NPT nations. India had raised the issue of the nuclear cooperation against the backdrop of G-8 resolution with French President Nicolas Sarkozy during his visit to Paris. The Group of 8 industrialised nations, which includes France, had in a declaration committed to curb transfer of ENR technology and items to countries that have not signed the Non-Proliferation Treaty. India is among the countries which have not signed NPT. Earlier India and

France had entered into an accord for supplying reactors and fuel consequent to the Indo-US nuclear deal, the 123 agreement and clearance by the NSG to enable New Delhi to have full-scale civil nuclear cooperation. As a first step, Department of Atomic Energy had entered into a contract with French Nuclear supplier AR ELEN for the supply of 300 tonnes of uranium ore concentrate and 60 tonnes were released under the first consignment which has been received by the NFC.

India has received the first consignment of 60 tonnes of uranium from France for use as fuel to power its nuclear reactors following a clearance by the 45-member Nuclear Suppliers Group (NSG). The uranium ore would now be processed at the Nuclear Fuel Complex (NFC) here for use in safeguarded pressurized heavy water reactors (PHWRs). France is a leading world exporter of civilian nuclear technology.

Reports say the deal includes providing India with France's latest model of the European Pressurised Reactor as well as other civilian nuclear material. The deal was good news for India - which is desperately short of energy to fuel its booming economy - and places it firmly as a world nuclear power. The deal in effect ends a ban which prevented countries from engaging in civilian nuclear trade with Delhi. The ban was imposed in 1974 when India used its civilian programme to produce and successfully test an atomic bomb. France is the world's second largest producer of nuclear energy after the United States. France and India have instituted a high-level, Strategic Dialogue at the level of National Security Advisors which provides both sides an opportunity to review the evolution of the overall global security situation and emerging challenges in various parts of the world. The 20th round of Strategic Dialogue took place in New Delhi on 17th January, 2009. Annual consultations between the two foreign ministries are held at the level of Foreign Secretaries. The Foreign Office Consultations took place in Paris on 5th February, 2009. A special Joint Working Group on Terrorism has been established to aid cooperation in the fight against terrorism. A High Level Committee

for Defence at the level of Defence Secretaries, working through its three specialized sub-committees, deals with issues related to our defence cooperation. The last meeting was held in Paris on 25th – 26th November, 2008. A Joint Committee for Economic and Technical Cooperation at the level of Ministers of Commerce, deals with issues related to commerce and trade. The last meeting was held in New Delhi on 16th -17th September, 2008. The erstwhile Indo-French Forum brought together eminent personalities and opinion makers of two countries from the fields of art, culture & technology, business and academia. The 11th Plenary Session of the IFF was held in Paris on 27th October, 2006. The 5th Coordinators' Meeting of the IFF was held in New Delhi on 2nd April, 2007. During President Sarkozy's visit to India in January, 2008, it was decided to convert the IFF into the CEOs' Forum. The list of members from both sides has been exchanged. The first preliminary session of the CEOs Forum is scheduled for 26th June, 2009 in Paris.

Economic and Commercial Relations: France is the 6th largest economy of the world and an important member of the G-8. Its technological strengths make it the leader in sectors such as aviation, space, food processing, transport, railways and agricultural research. However, France's business interaction with India is not commensurate with its intrinsic economic capacity. France is ranked 5th in the list of India's trading partners among EU countries (after the UK, Belgium, Germany and Italy). Indo-French bilateral trade has been growing over the years. Indo-French trade, at € 6.78 billion, is still below the potential. In the Joint Statement issued at the conclusion of President Sarkozy's visit to India in January 2008, it was decided to double the two-way trade by 2012, i.e. to increase from the then level of € 6.14 billion to almost € 12 billion. This was reiterated during PM Manmohan Singh's visit to France in September, 2008. 13. French exports to India comprise mainly of aeronautical & space construction products, iron & steel products, electrical equipment and apparatus, measuring and process control equipment, organic chemical products, mechanical products, etc. Indian exports to France consist of a wide range of goods and services spread over a large base of Indian companies, especially from the small and medium

sector. While traditional items such as garments & textiles constitute a major share of India's exports to France, a number of newly developed non-traditional items such as food products, organic chemicals, refined petroleum products, etc. are showing promising growth.

Foreign Direct Investment (FDI) approved from France from 1991 to October, 2008 is of the order of US\$ 1.9 billion out of which the actual inflow is of the order of US\$ 103 billion. The number of technical and financial collaborations approved with France is 952. France is the 9th largest foreign investor in the period August 1991 to October, 2008. During President Sarkozy's visit to India, French interlocutors indicated that investments by major French companies were planned in the energy, automobile, aerospace, food processing and other sectors. Indian investments in France have also been growing. Indian companies are active in IT, pharmaceuticals, plastic industry and auto-parts etc. in France. In 2007, Indian companies invested around € 0.42 billion in France. French companies have recorded interest of investment of Euros 10 billion during 2007-2012. France should capitalize on the Indian community that already lives on its own soil—much as the U.S. and Britain have done via organizations like Silicon Valley's TiE (The Indus Entrepreneurs). This French minority group boasts 60,000 bilingual Franco-Indians who can act as sociocultural intermediaries to forge tight, knowledge-rich economic ties between the 65 million French and 1.15 billion Indians. The result could lift both countries.

Ans 1 (c)

Michelle Bachelet, President of the Republic of Chile paid a state visit to India from 16-20 March 2009, at the invitation of the President of India. The visit assumes special significance as it coincides with the 60th Anniversary of the establishment of diplomatic relations between India and Chile. The anniversary was marked by the holding of a special concert in New Delhi on 16th March 2009 at which both Indian and Chilean artists performed in the presence of the Presidents of both countries. During this visit both sides reviewed the state of bilateral relations and expressed satisfaction at the pace at which mutually beneficial cooperation is progressing. As democratic nations, Chile and India share values such as, respect for human rights and fundamental freedoms including religious, rule of law and tolerance. Prime Minister Singh and President Bachelet underlined the importance of enhancing trade and economic relations. They noted that the Preferential Trade Agreement [PTA] between Chile and India, in force since August 2007, has facilitated the growth in bilateral trade which reached US\$ 2.3 billion in 2008. They welcomed the growing and dynamic trade relations and agreed that the PTA has opened new avenues for cooperation and investment for Chilean and Indian companies. Both Leaders evinced interest in exploring the feasibility of entering into a Free Trade Agreement and expressed satisfaction that the process of broadening and deepening of the existing PTA has already been initiated. It was also agreed to enhance the periodic exchanges of business missions and participation in each other's trade fairs to facilitate promotion of their respective countries' products and services. Both sides agreed to endeavour to double bilateral trade in the next five years. The two Leaders expressed interest in strengthening cooperation in new areas such as Information Technology (IT) and bio-technology in which India is regarded as a pioneer amongst developing nations. Both countries welcomed the growing interest of Chilean and Indian educational institutions in establishing stronger ties. They welcomed the Memorandum of Understanding between the University of Madrás and the Universidad de Talca, to be signed on 20th March 2009.

They also noted that the proposal for signing a Cooperation Agreement on Gender Equality between both countries is at an advanced stage of consideration. Chile strongly condemned the terrorist attacks on Mumbai on 26th November 2008. Pursuant to the attacks, the President of Chile had written to the Prime Minister of India condemning the "heinous and cowardly terrorist attacks as they constitute crimes against humanity and a threat to human safety on a global scale". Both Leaders called for enhanced international cooperation and exchange of information through appropriate channels in order to enhance the ability of the governments to fight terrorism. In this regard, they reiterated that early conclusion of the Comprehensive Convention on International Terrorism

is imperative to consolidation of counter terrorism efforts within the UN.

India and Chile reiterated their continued commitment to multilateralism and the principles enshrined in the United Nations Charter. Chile and India reaffirmed their support for a comprehensive reform of the United Nations, including expansion of the Security Council to make this body more representative, legitimate and effective. Both nations stressed and acknowledged the need for continued efforts by the Member States to ensure meaningful and result-oriented intergovernmental negotiations. Chile reiterated its support for India's permanent membership on an expanded UN Security Council. They also confirmed their reciprocal support for each other's candidature for non-permanent membership of the UN Security Council for 2011-12 for India and 2014-15 for Chile. Both countries seek a development-oriented, ambitious and balanced outcome to the Doha Development Round at the earliest.

India and Chile reaffirmed their commitment to continue negotiations within the framework of the Bali Plan of Action in order to reach an agreed outcome for the effective implementation of the United Nations Framework Convention on Climate Change (UNFCCC). This outcome must respect the provisions and principles of the UNFCCC, in particular, the principle of common but differentiated responsibilities and respective capabilities. Chile and India agreed on the importance of the promotion of joint initiatives on R&D on advanced clean technologies with the objective of finding concrete and innovative solutions to the issue of climate change. In this regard, they urged developed countries to establish a global fund to promote renewable energy and clean technologies, both in terms of application of existing technologies as well as R&D into new and innovative technologies. The two Leaders held in-depth discussions about the ongoing financial and economic crisis and agreed that it was important that the regulatory failure in developed countries leading to the crisis should be urgently addressed.

Ans. 2 (a)

INS Arihant (S-73) is the lead ship of India's Arihant class of nuclear-powered submarines. It was launched by Prime Minister Manmohan Singh and his wife Gursharan Kaur on July 26, 2009 to mark the anniversary of Vijay Diwas (Kargil War Victory Day). INS Arihant is expected to formally join the Indian Navy in 2012 after undergoing extensive sea-trials. The 6,000-tonne vessel was built under the Advanced Technology Vessel (ATV) project at the Ship Building Centre in Visakhapatnam at a cost of US\$2.9 billion.

With the launch of the submarine India will join the exclusive club of US, Russia, China, France and the UK with similar capabilities. Arihant's primary weapon is stealth as it can lurk in ocean depths of half a kilometre or more and fire its missiles from under the sea. The 6000-tonne submarine is powered by an 85 megawatt capacity nuclear reactor and can acquire surface speeds of 22 to 28 kmph (12-15 knots) and submerged speed upto 44 kmph (24 knots). It will be carrying a crew of 95 men and will be armed with torpedoes and missiles including 12 ballistic missiles. The Rs 30,000-crore secret nuclear submarine project was started in the 1980s though it was conceived by then Prime Minister Indira Gandhi in the 1970s.

Ans 2 (b)

At the invitation Dr. Manmohan Singh, Prime Minister of India, Mr. Hamid Karzai, President of Afghanistan visited India in January 2009. The visit was symbolic specially to express Afghanistan's solidarity with the Government and people of India in the wake of the Mumbai terrorist attack. The deplorable incident shows that terrorism is a threat to the entire humanity. During the visit, a joint statement was issued on January 12, 2009. The leaders called for the full compliance with bilateral, multilateral and international obligations of States to prevent terrorism in any manner originating from territories under their control since terrorism emanates from

the sanctuaries and training camps and the sustenance and support received by the terrorist groups. While reviewing their robust, strategic partnership, the two leaders expressed satisfaction at the progress in bilateral development and reconstruction projects in all parts of Afghanistan.

India conveyed to President Karzai that, following the completion of the road from Zaranj to Delaram in South-western Afghanistan, a second major infrastructure project, the Pul-e-Khumri to Kabul transmission line and the sub-station at Chimtala in Northern Afghanistan, will be handed over shortly to the Government of Afghanistan. The both leaders expressed their satisfaction that the construction of the Afghan Parliament, a symbol of the common commitment of both countries to pluralism and democracy, also began. India conveyed that it will gift Afghanistan 250000 metric tonnes of wheat. The shipment will be effected immediately, as soon as the Government of Afghanistan has worked out its transportation arrangements. President Karzai invited Prime Minister Dr. Singh for a State Visit to Afghanistan. The invitation was accepted with pleasure. Both countries reaffirmed the special relationship between India and Afghanistan, to build a strong, united, and prosperous Afghanistan and to work towards peace, stability and development of the entire region.

Ans 2. (c)

India has permanent interest and commitment to the domestic political stability and peace in Sri Lanka as the developments in Sri Lanka affect the peace and order situation in some of Indian States, particularly Tamilnadu. On the economic front, for India, Sri Lanka is a small market and accounts for about 2 per cent of Indian exports and less than 1 per cent of Indian imports. India exports to Sri Lanka varieties of goods and services including transport equipment, cotton yarn, fabrics, readymade garments, iron and steel, machinery and instruments, sugar and wheat, drugs and pharmaceuticals, chemicals, glass and glassware, ceramics, cement and paper and wood products; and imports non-ferrous metals such as copper, spices, electronic goods, electrical machinery, scrap metal paper pulp and chemicals. The two countries have created a large legal framework to advance their cooperation: a free trade agreement; a double taxation avoidance agreement; and a series of bilateral agreements and understandings for cooperation in the areas of small-scale industries, agriculture, tourism, space and information technology and air travel facilities.

The Free Trade Agreement between India and Sri Lanka came into full existence from March 1, 2000. A free trade arrangement between India and Sri Lanka has promoted mutually beneficial bilateral trade and strengthened intra-regional economic cooperation. Under the agreement zero duty on around 1000 items has been provided by India except for those in the negative list. Domestic value-addition requirements have been kept at 35 per cent. With the introduction of FTA trade has grown rapidly between the two states. The FTA prompted a 257 per cent increase in bilateral trade between 2001 and 2004. Bilateral trade exceeded US \$ 1.7 billion in 2004 and rose to US \$ 2.025 billion in 2005. India is the 3rd largest destination for Sri Lankan exports. With FDI approvals of US \$ 450 million, India is the 4th largest investor in Sri Lanka.

Ans. 2 (d)

Nursultan Nazarbayev, the President of the Republic of Kazakhstan, paid a State Visit to India from 23rd to 26th January 2009. He participated as the Guest of Honour at the Republic Day Parade. During the State Visit, President Nursultan Nazarbayev strongly condemned the terrorist attacks in Mumbai and reiterated the need for intensifying global cooperation in combating international terrorism. He also conveyed assurance that Kazakhstan stood firmly with India in dealing with the scourge of global terrorism. India and Kazakhstan called for early conclusion of the Comprehensive Convention on International Terrorism within the UN framework. Both Sides noted that this opened immense possibilities of cooperation in nuclear civil energy sector including in the mining

of uranium. The two Governments welcomed the signing of Memorandum of Understanding between Nuclear Power Corporation of India and National Atomic Company Kazatomprom JSC and recommended early conclusion of an Inter Governmental Agreement for Cooperation in Peaceful Uses of Nuclear Energy. The Indian Side conveyed that Kazakhstan ranks high in securing India's energy security and hoped that the conclusion of the Agreement is the beginning of a long term mutually beneficial cooperation in the hydrocarbon sector.

Ans. 2 (e)

India and Nepal share close and friendly political, economic, cultural and social ties, which are unique and have stood the test of time. During the visit of Foreign Secretary to Nepal on June 20-21, 2009, India reiterated its support to the new government of Nepal led by Madhav Kumar Nepal. Both sides also agreed to take the bilateral relations forward. Recently, there have been some media reports in Nepal regarding alleged encroachment of Nepalese territory by India. India investigated and found the allegation false. There are bilateral institutional mechanisms for effective border management, including at district level, to address such concerns. In addition to these, it has also been agreed to establish local level mechanisms during the recent visit of Foreign Secretary to Nepal.

Ans. 3 (a)

The concept of mini PBD is based on requests received over the years from various quarters to organise it outside India to let the Indian Diaspora in the region benefit from the deliberations. This is particularly helpful to those large numbers of Indians in several regions who are not able to make it to the annual PBDs held in India. The first mini Pravasi Bharatiya Divas Convention was held in New York in September 2007 while the next one was organized at Singapore in October 2008. The next mini Pravasi Bharatiya Divas Convention titled 'PBD Europe' will be organised at the historic World Forum in The Hague on 19th September, 2009.

This Convention is expected to bring together members of the Indian Diaspora in Europe at the common platform to discuss the role of the Indian Diaspora in enhancing Indo-European cooperation, opportunities and challenges faced by them in the fields of culture, heritage & tradition, as also Trade and Investment opportunities available for them in the land of their ancestors.

Ans. 3 (b)

The Ministry of Overseas Indian Affairs has launched a new initiative to develop a Diaspora Knowledge Network called – Global Indian Network of Knowledge (Global INK). This will serve as Knowledge Bank. The Global INK, an electronic platform will connect people of Indian Origin from a variety of disciplines recognized as leaders in their respective fields, not just in their country of residence but globally as well, with knowledge users at the national and sub national levels in India. The network will serve as a strategic 'virtual think tank'. The Outcome targeted will be the germination of ideas on development, identification of the key elements in addressing the challenges to development and articulation and mapping out solutions through innovations and technological interventions.

Ans. 3 (c)

Ministry of Overseas Indian Affairs has set up an Overseas Indian Facilitation Center (OIFC) as a not-for-profit-trust, in partnership with Confederation of Indian Industry (CII). The Center is a 'one stop shop' for serving the interests of the Overseas Indian community and has the mandate to cover two broad areas (a) Investment

Facilitation and (b) Knowledge Networking.

The objectives of the Centers are:

» Promote Overseas Indian investment into India and facilitate business partnership, by giving authentic and real time information

» Function as clearinghouse for all investment related information. This would be done by processing information on a real time basis through Information and Communication Technology (ICT) platform

» Establish and maintain a Diaspora Knowledge Network (DKN) by creating a database of Overseas Indians, who would act as knowledge Diaspora and whose knowledge resources could be using ICT platform

» Assist States in India to project investment opportunities to overseas Indians in the infrastructure and social sectors. The objectives of the OIFC will be to bring the Indian States, Indian Business and potential Overseas

» Investors on the same platform and to facilitate the investors to identify the investment opportunities
Provide a host of advisory services to PIO and NRIs. These could include matters such as consular questions, stay in India, investment and financial issues etc.

An Overseas Workers Resource Centre (OWRC) has been set up as a helpline for assistance and protection of Indians working abroad and prospective emigrants with following objectives:

1. Information dissemination on matters relating to emigration
2. Registering, responding to and monitoring complaints received from emigrant workers
3. Grievance redressal and follow up with stakeholders

Ans. 3 (d)

Ministry of Overseas Indian Affairs had established an Overseas Workers Resource Centre (OWRC) on 8th January, 2008 during the Pravasi Bharatiya Divas. The Centre provides need based information and assistance to emigrants.

Now an International toll free No. 800 091 202 53 has been added by the OWRC for the benefit of Indian emigrant workers and other information seekers in the three countries in the Gulf namely UAE, Saudi Arabia and Kuwait. This international toll free number can be reached 24/7 from these three countries.

Ans. 3 (e)

The Government of India has set up the Indian Council of Overseas Employment (ICOE) to serve as a 'think tank' for the promotion of overseas employment, better protection and welfare of overseas Indian workers and for the study of emerging overseas employment opportunities. One of the objectives of the ICOE is to study and analyse the trends in International labour markets. The ICOE is undertaking a study through the International Organization for Migration (IOM) on labour market assessment in six EU countries -France, Denmark, Czech Republic, Sweden, Romania and Poland. In addition, it has finalized a cooperation agreement with the European University Institute, Florence for collaborative research and studies relating to mobility of people between India and the European Union (EU).

Ans. 3 (f)

25 per cent of skilled migrants in Australia are Indians. From cooks, welders, plumbers, hairdressers, electricians, to engineers and accountants, the State of Western Australia is facing a shortage of skilled labour and professionals, and is keen on getting more skilled migrants from India. Some 43000 jobs would be created in the next ten years.

Ans. 4 (a)

In July 2009, the IMF's Executive Board approved the package of measures that will sharply increase the loan resources available to low-income countries. The resources—including from the planned sale of IMF gold—are expected to boost the Fund's concessional lending to up to \$17 billion through 2014, including up to \$8 billion over the next two years. The IMF announced zero interest payments up to the end of 2011 for all concessional loans to low-income members and lower interest rates on a permanent basis thereafter. A new set of lending instruments will underpin this increased support. The crisis originated in the advanced economies and has had its most visible impact on the emerging market countries. But a third wave of the crisis has threatened the remarkable economic achievements many low-income countries have made over the past decade.

Package: As part of the response, the IMF has already more than doubled its financial assistance to low-income countries. New IMF concessional lending commitments to low-income countries through mid-July 2009 reached \$2.9 billion compared with \$1.5 billion for the whole of 2008. The new measures represent a significant additional effort in the coming years. The IMF support package includes:

» Mobilization of additional resources, including from sales of an agreed amount of IMF gold, to boost the Fund's concessional lending capacity to up to \$17 billion through 2014, including up to \$8 billion in the first two years. This exceeds the call by the Group of Twenty for \$6 billion in new lending over two to three years.

» Interest relief, with zero payments on outstanding IMF concessional loans through end-2011 to help low-income countries cope with the crisis.

» Permanently higher concessionality of Fund financial support—with annual interest rates regularly reviewed so as to preserve a higher level of concessionality than previously.

» Doubling of average loan access limits for low-income countries

» A new set of financial instruments tailored to the diverse needs of low-income countries and better suited to meet the crisis challenges:

1. An Extended Credit Facility (ECF) to provide flexible medium-term support;
2. A Standby Credit Facility to address short-term and precautionary needs; and
3. a Rapid Credit Facility, offering emergency support with limited conditionality

In addition, the IMF's Executive Board recently backed the Managing Director's proposal for a new general allocation of \$250 billion of Special Drawing Rights into the global economy, of which more than \$18 billion will help bolster the foreign exchange reserves and relax the financing constraints of low-income countries. If approved by the IMF's Board of Governors, the proposed SDR allocation would take place at the end of August. The new lending windows are expected to become effective later this year, when donor countries have given

their final consent. At that time, existing concessional arrangements will automatically be converted into ECF arrangements. Existing arrangements under the Exogenous Shocks Facility, however, will remain in effect, and new ones that have already been prepared could still be approved during a three-month window.

Need of Support: An IMF report on the implications of the global financial crisis for low-income countries had warned in March that the global financial crisis has hit poor countries especially hard, posing serious threats to their hard-won gains in boosting economic growth and creating a need for additional foreign financing to mitigate the impact of the crisis. Also in March, Tanzania President Jakaya Kikwete, Strauss-Kahn, and former UN Secretary-General Kofi Annan convened a conference in Dar es Salaam of government, business, civil society, and opinion leaders to address these issues. The IMF committed at the meeting to increase its support for Africa with more financing, greater flexibility, enhanced policy dialogue, and a further strengthening of Africa's voice in the Fund.

Fund: Some of the money to boost IMF lending to low-income countries will come from the envisaged sales of IMF gold. The IMF Executive Board will consider a plan for the Fund to sell about 400 metric tons of gold in order to create a new income model for the institution. In order to meet the financing needs of the low-income countries during the global crisis, some of the proceeds of those sales will be used to help provide new subsidy resources for the concessional lending to those countries. Resources linked to the gold sales will be used to help fund concessional lending to low-income countries in the following ways. First, windfall profits when the gold sales take place can be used for the subsidy resources. Windfall profits would derive from gold sales at an average price in excess of \$850 per ounce—that is the price assumed in the new income model as necessary to fund the model. Second, to the extent that the realized windfall profits fall short of the required contribution, the remaining amount will be generated through investment income from the endowment funded by the gold sales.

Ans. 4 (b)

Foreign Direct Investment (FDI) equity inflows in the country have increased from US \$ 5.5 billion in 2005-06 to US \$ 27.31 billion in the year 2008-09. The FDI inflows in 2007-08 were US \$ 24.58 billion and increased to US \$ 27.31 billion in 2008-09, despite the economic slowdown, showing a percentage growth of 11% over the previous financial year.

Government has put in place a liberal and investor-friendly policy on FDI under which FDI up to 100% is permitted on the automatic route in most sectors/ activities, including infrastructure and Research and Development (R&D). The UNCTAD World Investment Reports (WIR) 2007 & 2008, in their analysis of the global trends and sustained growth of Foreign Direct Investment (FDI) inflows, have reported India as the second most attractive location for FDI for 2007- 2009. India has retained the second place in A. T. Kearney's 2007 Foreign Direct Investment Confidence Index, a position it has held since 2005. Government has also announced a slew of measures to accelerate the demand in the economy which would enable India to continue as an attractive investment destination. Under the liberalized economic environment, investment decisions of investors are based on the macro-economic policy framework, investment climate in the state, investment policies of the transnational corporations and other commercial considerations.

The Government of India continues to make efforts to increase economic cooperation with the developing as well as developed countries through different fora such as Joint Commissions/Joint Committees, other bilateral channels like interaction with the delegations visiting the country and organizing visits abroad for discussions on issues of mutual interest and business/ investment meets between Indian and foreign entrepreneurs to stimulate foreign investment into India. The Department of Industrial Policy and Promotion also participates in discus-

sions covering industrial cooperation organized by other Ministries and Departments of Government of India and the Joint Business Council meetings.

The Government of India also undertakes investment promotion activities through organisation of Destination India and Invest India events in various countries with FDI potential to create awareness about the investment climate and opportunities in India, as well as to provide support to potential investors.

The Government of India, in partnership with various State Government and Business Associations, is making concerted efforts to make regulations conducive for business. In addition, the Government has initiated to implement e-Biz Project, a Mission Mode Project under the National e-Governance Project, to provide online registration, filing payment services to investors and business houses.

In FDI equity investments mauritius tops the list of first ten investing countries followed by US, UK, Singapore, Netherlands, Japan, Germany, france, Cyprus and Switzerland. Between April 2000 and July 2008 FDI inflows from Mauritius stood at \$ 30.18 billion followed by \$5.80 billion from Singapore; \$ 5.47 billion from the US; \$ 4.83 billion from the UK; \$ 3.12 billion from the Netherlands; \$ 2.26 billion from Japan; \$1.83 billion from Germany; \$ 1.41 billion from Cyprus; and \$1.02 billion from France.

Ans. 5 (a)

A Challenge fund for Export Promotion Activities by Indian Missions abroad, has been set- up with a corpus of Rs. 5 crore, under the Market Access Initiative (MAI) scheme. The MAI scheme of the Department of Commerce is an export promotion scheme envisaged to act as a catalyst to promote India's export on a sustainable basis. Since, Indian Missions abroad are also eligible for assistance under the scheme, a "Challenge Fund" has been created under the same.

The MAI focus on the markets which in turn will focus upon product export promotion activities including innovative market promotion projects to showcase the Indian export capabilities. Projects relating to only market promotion activities shall be considered; export promotion of new items in India's export baskets by way of market development and market penetration and export promotion initiatives for Micro, Small and Medium enterprises (MSME) with a stress on regions and countries where India has a small bilateral trade profile (Africa and Latin America), shall be given priority; duplication of projects already implemented under the MAI/ MDA scheme of the Commerce Ministry is prohibited. The fund is used to finance specific export promotion schemes and projects which envisage introduction of new items of export towards diversification of the Indian export basket in the host country. These projects shall be proposed by Indian Missions abroad. Each individual project has been assigned a budget of Rs. 10 lakh. Priority shall be given to focused, specific projects with tangible results. The project proposals received shall be subjected to compete for funding on their merits.

Ans. 5 (b)

The subprime crisis that surfaced around August 2007 had affected financial institutions in the United States and Europe including the shadow banking system comprising inter alia investment banks, hedge funds, private equity and structured investment vehicles. With the collapse of Lehman Brothers and other Wall Street icons, there was growing recession which affected the US, the European Union (EU) and Japan. This was the result of large scale defaults in the US housing market as the banks went on providing risky loans without adequate security and the repaying capacity of the borrower. The principal source of transmission of the crisis has been the real sector, generally referred to as the 'Main Street'. This crisis engulfed the United States in the form of creeping recession

and this worsened the situation. As a consequence, US demand for imports from other countries indicated a decline.

Cause of Crisis: The basic cause of the crisis was largely an unregulated environment, mortgage lending to subprime borrowers. Since the borrowers did not have adequate repaying capacity and also because subprime borrowing had to pay two-to-three percentage points higher rate of interest and they have a history of default, the situation became worse. But once the housing market collapsed, the lender institutions saw their balance-sheets go into red.

Impact on India: The effect on the Indian economy was not significant in the beginning. The initial effect of the subprime crisis was, in fact, positive, as the country received accelerated Foreign Institutional Investment (FII) flows during September 2007 to January 2008. This contributed to the debate on “decoupling,” where it was believed that the emerging economies could remain largely insulated from the crisis and provide an alternative engine of growth to the world economy. The argument soon proved unfounded as the global crisis intensified and spread to the emerging economies through capital and current account of the balance of payments (BoP). The net portfolio flows to India soon turned negative as Foreign Institutional Investors (FIIs) rushed to sell equity stakes in a bid to replenish overseas cash balances. This had a knock-on effect on the stock market and the exchange rates through creating the supplydemand imbalance in the foreign exchange market. The current account was affected mainly after September 2008 through slowdown in exports. Despite setbacks, however, the BoP situation of the country continues to remain resilient. It was found that the Foreign Direct Investment (FDI) started drying up and this affected investment in the Indian economy. It was, therefore, felt that the Indian economy will grow at about seven per cent in 2008-09 and at six per cent in 2009-10. The lesson of this experience is that India must exercise caution while liberalising its financial sector.

A redeeming feature of the current crisis is that its magnitude is much lesser than that of the Great Depression of the 1930s when unemployment rate in the United States exceeded 25 per cent. Currently, it stands at 6.5 per cent and is predicted to remain around eight per cent in 2009. The industries most affected by weakening demand were airlines, hotels, real estate. Besides this, Indian exports suffered a setback and there was a setback in the production of export-oriented sectors. The government advised the sectors of weakening demand to reduce prices. It provided some relief by cutting down excise duties, but such simplistic solutions were doomed to failure. Weakening demand led to producers cutting production. To reduce the impact of the crisis, firms reduced their workforce, to reduce costs. This led to increase in unemployment but the total impact on the economy was not very large. Industrial production and manufacturing output declined to five per cent in the last quarter of 2008-09. Consequently, a vicious cycle of weak demand and falling output developed in the Indian economy.

A weakening of demand in the US affected India’s IT and Business Process Outsourcing (BPO) sector and the loss of opportunities for young persons seeking employment at lucrative salaries abroad. India’s famous IT sector, which earned about \$ 50 billion as annual revenue, is expected to fall by 50 per cent of its total revenues. This would reduce the cushion to set off the deficit in balance of trade and thus enlarge our balance of payments deficit. It has now been estimated that sluggish demand for exports would result in a loss of 10 million jobs in the export sector alone.

Government’s Efforts: To haul up the economy dented by recession the Government announced a package of Rs 35,000 crores in the first instance on December 7, 2008. The main areas to benefit were the following:

(a) Housing - A refinance facility of Rs 4000 crores was provided to the National Housing Bank. Following this, public sector banks announced to provide small home loans seekers loans at reduced rates to step up demand in

retail housing sector.

The housing package is the core of the government's new fiscal policy. It will give a fillip to other sectors such as steel, cement, brick kilns etc. Besides, the small and medium industries (SMEs) too get a boost by manufacturing all kinds of fittings and furnishings.

(b) Textiles - Due to declining orders from the world's largest market the United States, the textile sector has been seriously affected. An allocation of Rs 1400 crores has been made to clear the entire backlog in the Technology Upgradation Fund (TUF) scheme.

(c) Infrastructure - The government has been proclaiming that infrastructure is the engine of growth. To boost the infrastructure, the India Infrastructure Finance Company Ltd. (IIFCL) has been authorised to raise Rs 14,000 crores through tax-free bonds. These funds will be used to finance infrastructure, more especially highways and ports. It may be mentioned that 'refinance' refers to the replacement of an existing debt obligation with a debt obligation bearing better terms, meaning thereby at lower rates or a changed repayment schedule. The IIFCL will be permitted to raise further resources by the issue of such bonds so that a public-private partnership (PPP) programme of Rs 1,00,000 crores in the highway sector is promoted.

(d) Exports - Exports which accounted for 22 per cent of the GDP are expected to fall by 12 per cent. The government's fiscal package provides an interest rate subsidy of two per cent on exports for the labour-intensive sectors such as textiles, handicrafts, leather, gems and jewellery.

(e) Small and Medium Enterprises (SMEs) - The government announced a guarantee cover of 50 per cent for loans between Rs 50 lakhs to Rs 1 crore for SMEs. The lock-in period for loans covered under the existing schemes will be reduced from 24 months to 18 months to encourage banks to cover more loans under the scheme. Besides, the government will instruct state-owned companies to ensure prompt payment of bills of SMEs so that they do not suffer on account of delay in the payment of their bills.

In short, the fiscal package is aimed at boosting growth in exports, real estate, auto, textiles and small and medium enterprises. The aim is to encourage growth and boost employment which have been threatened by the recession in the world economy, more especially in the United States. Just within a month, the government announced another package to bail out the Indian economy. The purpose of the new package announced on January 1, 2009 was to minimise the pain.

On February 24, 2009, the government announced a slashing down of excise duty from 10 per cent to eight per cent - a reduction by two per cent. The entire stimulus package of Rs 30,000 crores to boost demand in the economy and thus reduce the impact of recession. Commerce and Industry Minister Kamal Nath announced a small relief package of Rs 325 crores for leather, textiles, gems and jewellery on February 26, 2009.

Ans. 5 (c)

India- MERCOSUR PTA has come into effect from 1st June, 2009. India with a total trade of US \$ 4773.39 million with MERCOSUR during 2007-08, had exports of about US \$ 2904.8 million during 2007-08 while imports stood at about US \$ 1868.39 million during the same period. As a follow up to the said Framework Agreement, a Preferential Trade Agreement (PTA) between India and MERCOSUR was signed in New Delhi on January 25, 2004 and five annexes to this Agreement were signed incorporated on March 19, 2005. By this PTA, India and MERCOSUR have agreed to give tariff concessions, ranging from 10% to 100% to the other side on 450 and 452 tariff lines respectively.

The major product groups covered in the offer are food preparations, organic chemicals, pharmaceuticals, essential oils, plastics & articles thereof, rubber and rubber products, tools and implements, machinery items, electrical machinery and equipments. The break-up of the number of tariff lines for different MOPs is: - 393 tariff lines – 10%, 45 tariff lines – 20% and 14 tariff lines – 100%. The major sectors covered in offer list of India are meat and meat products, inorganic chemicals, organic chemicals, dyes & pigments, raw hides and skins, leather articles, wool, cotton yarn, glass and glassware, articles of iron and steel, machinery items, electrical machinery & equipments, optical, photographic & cinematographic apparatus. The break-up of the number of tariff lines for different margin of preferences (MOP) is:- 93 tariff lines – 10%, 336 tariff lines – 20% and 21 tariff lines – 100%.

MERCOSUR is a trading bloc in South America region comprising of Argentina, Brazil, Paraguay and Uruguay. It was formed in 1991 with the objective of free movement of goods, services, capital and people and became a customs union in January 1995. MERCOSUR's role model is European Union. A Framework Agreement had been signed between India and MERCOSUR on 17th June 2003 at Asuncion, Paraguay. The aim of this Framework Agreement was to create conditions and mechanisms for negotiations in the first stage, by granting reciprocal tariff preferences and in the second stage, to negotiate a free trade area between the two parties.

Ans. 6 (a)

A financial facility of the Fund established in 1986 to provide concessional loans to low-income Fund member countries. It recycled resources lent under the IMF's Trust Fund. It was superseded by the Enhanced Structural Adjustment Facility (ESAF) which was established in 1987 to promote stronger adjustment and reform measures than those under the SAF. The ESAF was replaced by the Poverty Reduction and Growth Facility in 1999.

Ans. 6 (b)

Rights Accumulation Program (RAP) is an economic program agreed between the IMF and an eligible member in protracted arrears to the IMF that provides a framework for the member to establish a satisfactory track record of policy and payments performance, and permits the member to accumulate rights to future drawings of IMF resources following clearance of arrears to the IMF, up to the level of arrears outstanding at the beginning of the program.

Ans. 6 (c)

Domestic support for agriculture that is allowed without limits because it does not distort trade, or at most causes minimal distortion.

Ans. 6 (d)

The Government examines the tariff and non-tariff measures (NTMs) imposed by developed countries especially on products of export interest for developing countries including steel. An Inter-Ministerial Committee has been constituted to co-ordinate the plan to tackle NTMs imposed by India's trading partners by taking an effective remedial action. An institutional mechanism in the form of a database of NTMs imposed by other countries on India's exports has also been created.

Ans. 6 (e)

ICSID is an autonomous international institution established under the Convention on the Settlement of Investment Disputes between States and Nationals of Other States with over one hundred and forty member States. The Convention sets forth ICSID's mandate, organization and core functions. The primary purpose of ICSID is to provide facilities for conciliation and arbitration of international investment disputes.

Ans. 7. (a)

The 1st BRIC- Brazil, Russia, India, China-summit took place in Yekaterinburg, Russia on June 16, 2009. The four heads of government from the BRIC countries attended. Joint Statement on Global Food Security was issued there. It was agreed by the national authorities in advance of the BRIC Summit.

The fluctuations of global food prices coupled with the global financial crisis is threatening global food security. As a result, the number of people suffering from hunger and malnutrition grows and the progress towards the achievement of the Millennium Development Goals may be reversed. This challenge should be addressed without delay in a comprehensive manner through resolute action by all Governments and the relevant international agencies.

The developed and developing countries should address the food security issue according to the principle of common but differentiated responsibility. The developed countries should provide financial and technology support for developing countries in the field of food production capacity. The BRIC countries welcome various initiatives in this field by the UN and its special agencies. The BRIC countries renew their commitment to contribute to the efforts to overcome the global food crisis. Countering effectively the global food crisis is impossible without a clear and full understanding of its causes. Attempts to explain food price hikes by an increase in consumption in developing countries obscure the true causes which have a complex and multifaceted nature. Global Climate Change and natural disasters have direct implications on food security through changes in agro-ecological conditions. Current global economic and financial crisis also has negative impact on food security through shrinking financial resources available to agriculture sector. Restricted market access and trade-distorting subsidies in developed countries have also hampered the development of food production capacity in developing countries over the last thirty years. Further, global market conditions have not created adequate incentives for the expansion of agricultural production in developing and least developed countries that have become main importers of food products.

It is also important to assess the challenges and opportunities posed by the biofuels production and use in view not only of the world's food security, but also of the energy security and sustainable development needs. An international cooperation mechanism needs to be established to review and reevaluate the long-term implications of the development of biomass energy, and develop relevant policy guidance accordingly. The BRIC countries welcome, therefore, the exchange of experiences on biofuels technologies, norms and regulations, in order to ensure that production and use of biofuels is sustainable, in accordance with the three pillars of sustainable development – social, economic and environmental – and that it takes into account the need to achieve and maintain global food security. Sustainable biofuels can constitute a driving force for social inclusion and income distribution mainly in the impoverished rural areas of developing and least developed countries, where most of the world's famine problems are located.

Tackling effectively the food crisis requires a fully coordinated international response and should include both short-term and long-term measures. The international community needs to work out and consistently implement

a comprehensive strategy to resolve this global problem. In this respect, the BRIC countries welcome the outcomes of relevant international fora, including the Food and Agriculture Organization (FAO) High-Level Conference on World Food Security in Rome.

The BRIC countries also welcome the results of the World Grain Forum which was held in Saint Petersburg and call on all interested states and international organizations to take necessary steps to implement the measures agreed upon at the Forum.

Ensuring food security requires a well-functioning world market and trade system for food and agriculture based on the principles of fairness and non-discrimination. In this regard, it is of paramount importance to accelerate the Doha round of talks at the World Trade Organization (WTO) in order to find compromise solutions for radical reductions of multibillion subsidies in the agricultural sector, which distort terms of trade and prevent developing countries from increasing their agricultural production. We are committed to opposing protectionism, establishing a just and reasonable international trade regime for agricultural products, and giving farmers from developing countries incentives to engage in agricultural production.

The BRIC countries support the adoption of a wide range of mid- to long-term measures in order to provide for a solution to the issue of food security. Such measures may include:

- a) rendering additional resources and assistance to the agricultural sector through the channels of respective national budgets and international development institutions, mainly to household agriculture, which is the main source for food production;
- b) joint technological innovations and international cooperation to introduce advanced technologies in the agricultural sector of developing countries to significantly increase agricultural productivity. Intellectual property rights in the agricultural domain should strike a balance between the common good of humankind and incentives to innovation;
- c) upgrading agricultural infrastructure, including irrigation, transportation, supply, storage and distribution systems and promoting technical assistance, access to credit and crop insurance policies. In this context public-private partnerships could play a significant role;
- d) improving the exchange of knowledge and commercialisation of sustainable biofuels;
- e) ensuring wider access to food at the national and international level through appropriate policies and well functioning distribution systems especially for the poor and most vulnerable people in developing countries;
- f) sharing of best practices of operating successful public distribution programmes; and
- g) equipping developing countries with financial and technological means to fully implement adaptation measures to minimize the adverse impacts of climate change on food security.

Ans. 7 (b)

The recent ethnic violence between Uighur Muslims and Han Chinese erupted in China's Xinjiang province on July 5. It captured the attention of the global media and China watchers. The violence deeply shattered the social-political life of the province, generating deep frustration among the local inhabitants; the orgy of violence was so powerful that a disturbed Hu Jintao, the President of China, had to leave the G-8 summit in Italy and

rushed back to Beijing.

According to China, the violence of July 5 was an “international conspiracy” and hatched by six countries, such as Pakistan, Afghanistan, Kazakhstan, Turkey and the United States. China also blamed the World Uighur Congress’ leader, Rebiya Kadeer, a businesswoman and a former political prisoner, for leading the “separatist movement” from exile.

The Uighurs are the very bottom of the heap economically in China. There is a very deep sense of frustration, especially among the unemployed young men. Many Uighurs complain that they have become second class citizens in their own homeland. Beijing has battled a low-level insurgency in Xinjiang for decades, but unrest has grown since 2007 as many Uighurs feel increasingly left behind by rapid economic growth that is mainly benefiting Han Chinese who have moved to the region. In fact, China’s policy of ‘go west’, failed to win the hearts and minds of the non-Han Chinese in Xinjiang. Han Chinese believe that the concession to the “one-child policy”, job reservation and relaxation in college entrance exams etc. have enormously benefited the non-Han Chinese; yet, the latter are ungrateful to the Chinese Government. Despite the development of Xinjiang, the separatist tendencies have been troubling the Chinese rulers in the region since the 1950s; and with the attack of 9/11, the demand for East Turkistan grew rapidly.

In fact, the violence of July 5 is also a reflection of the “growing gap between the well-off Han Chinese and impoverished Uighurs”. Second, the non-Han Chinese in the region also feel culturally alienated. The rulers of post-Communist China must resolve the riddle of Han-versus-non-Han in Xinjiang so that peace and tranquillity thrives and the project of modernisation and development of Xinjiang continues without further obstacles and hindrances.

Xinjiang’s Position: Historically, locally known as East Turkistan, Xinjiang was independent till 1933; in 1945, a group of rebels established an “independent republic” close to the Soviet Union. However, in 1949 the Chinese Communists with the help of the former Soviet Union established Xinjiang (New Territory). Demographically, in 1949, the Han Chinese in Xinjiang were only six per cent and increased to 40 per cent in 2009. On the other hand, between 1949 and 2009, the Uighurs in Xinjiang were reduced from 80 to 45 per cent. Xinjiang is a province of 20 million, out of which eight million Uighur Muslims refuse to follow the rule of the CPC. Xinjiang is the largest state of China (one-sixth) with the biggest resources of coal, oil and natural gas. In 2004 alone, the Tarin basin produced around five million tonnes of oil. Uighurs apart, Kazakhs and Tajiks also constitute minority groups of the region. While the Han Chinese follow Confucianism in routine life, and the local party cadres of the CPC preach atheism, the non-Han Chinese practise “Sufi mysticism”. As the religious institutions have been effectively banned in Xinjiang and the “Mandarin” has become a compulsory tool for higher education, the non-Han Chinese feel pain and agony at the very core of their heart. It is confirmed that demographic domination apart, a sort of cultural conflict is vividly visible in the social milieu of Xinjiang.

From the point of view of geopolitics, Xinjiang shares its borders with eight countries, Kazakhstan, Kyrgyzstan, Tajikistan, Pakistan, Afghanistan, Russia, India and Mongolia; and in the economic sense, Xinjiang may be identified as a “gateway to Central Asia”. China’s oil experts frequently visit the oilfields of Central Asia, which also perturb the rulers of Central Asia, outfits of the Al-Qaeda and the military establishment of Pakistan. One must mention that constitutionally Xinjiang is an autonomous region of China; however, culturally and linguistically it is close to Central Asia. More importantly, while in the nineteenth century, Britain and Russia competed for the natural resources of Central Asia, in the post-Cold War era, China, Russia and the US are battling to capture the oil and gas of Central Asia. Culture apart, Xinjiang’s periodic violence is also a reflection of Central Asia’s “oil rivalry”. In this sense, China’s accusation against the West for troubling her in Xinjiang is not ground-

less. Knowing fully well the enormous importance of Central Asia and Xinjiang to “the development of China”, Mao was as eager to “build” Xinjiang as Deng. Factually, in 1949, Xinjiang was without a railway station; however, by the end of 1962, its capital Urumqi was connected with the Gansu province of China, and in 1984, Xinjiang’s western part was expanded connecting the cities of Turpan and Korla; by 2006, Xinjiang’s railway network expanded further adding 1,43,000 km. In 2009, Xinjiang is a province of 20 land ports with several metropolises. The Chinese rulers also have a plan to connect Xinjiang with Pakistan to help promote trade between China and Pakistan. China’s nuclear programme is also installed in Xinjiang.

Ans. 8. (a)

The meeting of the G-8 plus the G-5 and Egypt was held at in L’Aquila, Italy on 8th July, 2009. The President of Brazil spoke about the idea of a G-14 at the meeting. Brazil, China, India, Mexico and South Africa are the member of Group of Five. Italian Prime Minister Berlusconi said between the G-8 and the G-5 together - the G-14 represents about 80 per cent of the world economy. He said that we might consider whether or not we should consider this a stable format for the future. One of the strongest supporters of idea of the G-14 which deals with larger governance issues was President Sarkozy actually in this meeting. The G-5 and G-8 had drawn up for the first time. He mentioned that this was a step forward where for the first time now in this Summit both the G-8 and G-5 were sitting and meeting for a considerable length of time. It was not just two hours of special session; it was all series of meetings. In fact, all of today they have been together and will be together tomorrow as well when the African countries join them. Then he gave the floor to the various G-5 and Egypt members who had just come to the meeting. There was considerable discussion on the need to reform international, not just financial institution, but also the institutions of international governance. Brazil's President Lula suggested to consider using own currencies within the G5 to settle own trading accounts with each other.

Ans 8. (b)

During the visit of Prime Minister of India to Japan in October 2008, both countries discussed the issues on bilateral, regional and multilateral relationship. On the WTO Doha Round negotiations, two countries shared the view that the early conclusion of the negotiations is vital for the maintenance and development of the international trade system, and agreed to continue their cooperation in advancing the negotiations towards the establishment of modalities early.

India and Japan welcomed the substantive progress achieved for the establishment of a Project Development Fund (PDF) which is important to promote the Delhi-Mumbai Industrial Corridor (DMIC) Project. The two Ministers directed the officials to accelerate the establishment of the PDF. Both welcomed the active participation by the Japanese companies in the Five Bird Projects.

Ans 8. (c)

The second World Conference Against Racism (WCAR), held at the U.N.’s European headquarters in Geneva in April 2009. It was, like the first one in Durban in 2001. Its objective was to evaluate the progress made towards the goals set eight years ago in South Africa. So it was called Durban Second. At the 2001 conference, the overwhelming majority of nations had condemned the legacy of colonialism, the slave trade, and racism in the contemporary era. Most of the delegates present in Durban had equated Zionism with racism.

Israel, the United States and Canada boycotted the Durban Review Conference, or Durban II, in Geneva on the flimsy grounds that the Jewish state was being targeted for unnecessary criticism. Israel and Canada, which has a right-wing government, decided last year itself to boycott the conference. There was considerable pressure

from liberal groups in the U.S. on the Barack Obama administration to participate in the conference. The U.S. State Department had in fact thanked the organisers for taking American sensibilities into consideration while preparing for the conference. Another positive signal from the White House was the U.S. decision to join the United Nations Human Rights Council.

Ans 8. (d)

The pro-West March 14 coalition emerges victorious in the closely contested parliamentary elections of June 7 in Lebanon. The victory of the pro-United States March 14 alliance, a coalition of anti-Syrian political parties led by Saad Hariri, in the closely contested Lebanese parliamentary elections of June 7 came as a relief to the pro-Western states in the West Asian region. U.S. President Barack Obama was among the first heads of state to congratulate the people of Lebanon on the choice they made.

Last-ditch efforts by the U.S., Saudi Arabia, Egypt and France seemed to have tilted the scales in favour of the March 14 alliance. The coalition derives its name from the day on which a massive demonstration was held in Beirut in 2005 against Syrian influence in Lebanon, a month after the assassination of former Prime Minister Rafiq al-Hariri. The West had portrayed the elections as a proxy fight with Iran for influence over Lebanon. The U.S. had unilaterally designated Hizbollah, which represents the downtrodden Shia populace, as a “terrorist” organisation. The Lebanese people were fully aware that soon after Hamas won the elections in Palestine, Washington reacted by cutting off financial aid, and gave the green signal to Israel to launch an attack.

Under Lebanon’s complicated electoral laws, which are dictated by its sectarian political system, the parliamentary seats are equally divided between Muslims and Christians. They are further divided between the 18 officially recognised religious sects, which include Sunnis, Shias, Alawites, Maronite Christians, Greek Orthodox, Armenian Christians and the Druze, which is an off-shoot of Islam. Until the 1940s, the Muslim and Christian populations were almost evenly divided. Today, the Christian population is fast declining and constitute less than 30 per cent, according to many experts. Most of the Lebanese diaspora consists of Christians. Because of sectarian sensitivities, no official census has been conducted since 1932. The French colonialists, while creating the state of Lebanon, had envisaged it as a Christian state. Until the 1960s, right-wing Christian parties had monopolised power in the country.

Ans 8 (e)

India’s increasing political visibility in East Asia, in the company of the United States and Japan, has already given grist to the thought mills. At the height of the latest poll campaign, the U.S. and India held a high-profile naval exercise with Japan along the waters close to China. Despite the official line that the U.S.-India-Japan exercise was not a move against China, Manmohan Singh’s mandate is seen as opening new geopolitical options too. Crystal-gazing in this domain is still confined largely to the parlours of non-official experts in strategic affairs. However, East Asian governments are expected to monitor closely Manmohan Singh’s foreign policy in the new innings. As East Asian political leaders scan the scene, India should now try to integrate itself into the regional networks of inter-state relations. India is a founding member of the East Asia Summit (EAS), a forum comprising 16 countries. However, it is an empirical reality that India lags behind China and Japan in almost all spheres of pan-East Asian cooperation

As of now, the U.S. remains outside the EAS, although the Barack Obama administration recently indicated its readiness to enter this forum. A critical pre-requisite is to accede to the ASEAN Treaty of Amity and Cooperation (TAC). After several years of a general aversion to it, Washington is now willing to begin its domestic process of acceding to the TAC. China and Japan as also South Korea tend to play lead roles within the EAS.

Doubtless, India is an equal member of the EAS, alongside these three countries besides the 10 ASEAN members, Australia and New Zealand. East Asian diplomats think that New Delhi has yet to take a major initiative towards the regional security dialogue. In some contrast, it is noted that Australian Prime Minister Kevin Rudd has proposed a new Asia Pacific Community. The idea of a pan-Asia economic group, outlined by Manmohan Singh a few years ago, is seen in East Asia as just that: an idea and not a political initiative.

Ans. 9 (a)

The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) is the regional development arm of the United Nations for the Asia-Pacific region. Established in 1947 with its headquarters in Bangkok, Thailand, ESCAP seeks to overcome some of the region's greatest challenges. It carries out work in Macroeconomic Policy and Development, Statistics, Subregional activities for development, Trade and Investment, Transport, Environment and sustainable development, Information and Communications Technology and Disaster Risk Reduction, Social Development.

Ans. 9 (b)

Asia-Pacific Economic Cooperation (APEC) is a forum for 21 Pacific Rim countries (styled 'member economies') to cooperate on regional trade and investment liberalisation and facilitation. APEC's objective is to enhance economic growth and prosperity in the region and to strengthen the Asia-Pacific community. Members account for approximately 40% of the world's population, approximately 54% of world GDP and about 44% of world trade.

Ans. 9 (c)

The Non-Aligned Movement (NAM) is an international organisation of states considering themselves not formally aligned with or against any major power bloc. The movement is largely the brainchild of India's first Prime Minister Jawaharlal Nehru, former president of Egypt Gamal Abdul Nasser and Yugoslav president Josip Broz Tito. It was founded in April 1955; as of 2007, it has 118 members. The purpose of the organisation as stated in the Havana Declaration of 1979 is to ensure "the national independence, sovereignty, territorial integrity and security of non-aligned countries" in their "struggle against imperialism, colonialism, neo-colonialism, racism, and all forms of foreign aggression, occupation, domination, interference or hegemony as well as against great power and bloc politics."

The 15th Non-Aligned Movement (NAM) Summit held in Sharm el-Sheikh, a Red Sea resort city in Egypt on July 16, 2009. Member countries reached consensus on promoting solidarity and ratified documents on jointly addressing international and regional issues. At the two-day summit held in this Egyptian Red Sea coastal city, leaders from over 100 NAM countries or their representatives focused their debate on the summit's theme of International Solidarity for Peace and Development. They extensively discussed international and regional problems, such as the ongoing global financial crisis, climate change, the Middle East peace process, food security, energy and nuclear issues. The Summit admitted Argentina as NAM observer country and the World Peace Council as its observer organization. Egyptian President Hosny Mubarak was elected as NAM Chairperson for the following 3 years

Ans. 9 (d)

On 6 June 1997, a new sub-regional grouping was formed in Bangkok and given the name BIST-EC (Bangladesh, India, Sri Lanka, and Thailand Economic Cooperation). Myanmar attended the inaugural June Meeting as an

observer and joined the organization as a full member at a Special Ministerial Meeting held in Bangkok on 22 December 1997, upon which the name of the grouping was changed to BIMST-EC. Nepal was granted observer status by the second Ministerial Meeting in Dhaka in December 1998. Subsequently, full membership has been granted to Nepal and Bhutan in 2003. In the first Summit on 31 July 2004, leaders of the group agreed that the name of the grouping should be known as BIMSTEC or the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation.

According to the Bangkok Declaration on the Establishment of BIST-EC, the aims and purposes of BIST-EC/ BIMST-EC are to create an enabling environment for rapid economic development, accelerate social progress in the sub-region, promote active collaboration and mutual assistance on matters of common interest, provide assistance to each other in the form of training and research facilities, cooperate more effectively in joint efforts that are supportive of, and complementary to national development plans of member states. The 2nd BIMSTEC Summit was held on 13 November 2008 in New Delhi, India. The 2nd BIMSTEC Summit has given a strong political impetus to the strengthening of BIMSTEC cooperation in the identified 13 priority sectors.

Ans. 9 (e)

It is the world's largest international police organization, with 187 member countries. Created in 1923, it facilitates cross-border police co-operation, and supports and assists all organizations, authorities and services whose mission is to prevent or combat international crime. INTERPOL aims to facilitate international police co-operation even where diplomatic relations do not exist between particular countries. Action is taken within the limits of existing laws in different countries and in the spirit of the Universal Declaration of Human Rights. INTERPOL's constitution prohibits 'any intervention or activities of a political, military, religious or racial character.' The President of INTERPOL and the Secretary General work closely together in providing strong leadership and direction to the Organization.

Ans. 10 (a)

Indian Space programme witnessed several major successes and reached great heights the year 2008 by successfully orbiting an un-manned spacecraft Chandrayaan-1 around the Moon, launching of ten satellites in a single launch, conducting acceptance test of indigenously developed cryogenic engine successfully and the launching of a commercial satellite for an international customer. India, in its space endeavours achieved a rare feat at 20:31 hrs on November 14, 2008 by placing the Indian tri colour when the Moon Impact Probe (MIP), one of the payloads on Chandrayaan-1 spacecraft hit the lunar surface and joined select band of countries who have placed an object on the Moon.

PSLV-C11/Chandrayaan-1 Mission: Chandrayaan-1 spacecraft, India's first un-manned mission to the Moon was launched successfully from the Satish Dhawan Space Centre in Sriharikota on October 22, 2008. The spacecraft was put into a transfer orbit with a perigee (nearest point to Earth) of 255 km and an apogee (farthest point to Earth) of 22,860 km, inclined at an angle of 17.9 deg to the equator. The orbit of the spacecraft was gradually raised by firing the Liquid Engine onboard Chandrayaan-1 spacecraft through carefully planned manoeuvres and was successfully inserted into the lunar orbit on November 8, 2008. Subsequently, the orbit of Chandrayaan-1 was lowered to 100 km through several manoeuvres.

Chandrayaan-1 is India's first spacecraft mission beyond Earth's orbit. It aims to expand our knowledge about Earth's only natural satellite – the moon by performing remote sensing of the moon using the instruments built in India and five other countries. Chandrayaan-1 mission aims to expand scientific knowledge about the moon

and to provide challenging opportunities for planetary research to the younger generation of Indian scientists. These aims are planned to be achieved through high-resolution remote sensing of moon in the visible, near infrared, microwave and X-ray regions of the electromagnetic spectrum. With this, preparation of a 3-dimensional atlas of the lunar surface and chemical and mineralogical mapping of entire lunar surface is intended.

PSLV-C9/CARTOSAT-2A/IMS-1 MISSION: Indian Space Research Organisation created a record on April 28, 2008 by successfully launching Polar Satellite Launch Vehicle - PSLV-C9 placing ten satellites, viz., CARTOSAT-2A, Indian Mini Satellite (IMS-1) and eight nanosatellites from abroad into the orbit. Polar Satellite Launch Vehicle with thirteen consecutively successful flights so far, has repeatedly proved itself as a reliable and versatile workhorse launch vehicle. It has demonstrated multiple satellite launch capability having launched a total of sixteen satellites for international customers besides fourteen Indian payloads including Chandryaan-1 and satellites for remote sensing, amateur radio communications and Space capsule Recovery Experiment (SRE-1). PSLV was used to launch ISRO's exclusive meteorological satellite, KALPANA-1, into a Geosynchronous Transfer Orbit (GTO) in September 2002 and thus proved its versatility.

CARTOSAT-2A carries a panchromatic camera (PAN) capable of taking black-and-white pictures in the visible region of electromagnetic spectrum. The highly agile CARTOSAT-2A is steerable along as well as across the direction of its movement to facilitate imaging of any area more frequently. High-resolution data from CARTOSAT-2A will be invaluable in urban and rural development applications calling for large scale mapping. The PAN camera onboard CARTOSAT-2A has started beaming high quality imagery of India and other parts of the globe. Indian Mini Satellite (IMS-1), flown as an auxiliary payload on board PSLV-C9, is developed by ISRO for remote sensing applications. Weighing 83 kg at lift-off, IMS-1 incorporates many new technologies and has miniaturised subsystems. IMS-1 carries two remote sensing payloads – A Multi-spectral camera (Mx Payload) and a Hyper-spectral camera (HySI Payload), operating in the visible and near infrared regions of the electromagnetic spectrum. The data from this mission will be made available to interested space agencies and student community from developing countries to provide necessary impetus to capacity building in using satellite data. The cameras onboard the versatile IMS-1 has been providing high quality imagery.

Indiaonal Satellite (Insat) System: Having established the need for a domestic communication satellite through Satellite Instructional Television Experiment (SITE) using ATS-6 satellite of USA during 1975-76, Satellite Telecommunication Experimental Project (STEP) using Franco-German Satellite Symphonie in 1978-79 and by building and utilising experimental communication satellite APPLE, the Indian National Satellite-1 (INSAT) system was operationalised in 1983. INSAT-1 satellites procured from abroad were multipurpose satellites providing telecommunication, TV broadcasting and meteorological services. INSAT-2, 3, 4 and GSAT satellites designed indigenously with higher power, more weight and capability to provide various services have been built and operationalised. India now has one of the largest domestic communications satellite systems in the Asia Pacific region with 11 operational satellites in orbit with more than 210 transponders providing vital services to the country.

The meteorological data from INSAT system is used for quick dissemination of warnings against impending disaster from approaching cyclones, specially designed receivers have been installed at vulnerable coastal areas in the country for direct transmission of warnings to the officials and public using INSAT broadcast capability. EDUSAT, a satellite dedicated for providing educational services, was launched in September 2004. EDUSAT is providing a wide range of educational delivery modes like one-way TV broadcast, interactive TV, video conferencing, computer conferencing, web-based instructions, etc. About 34,000 class rooms that utilise EDUSAT covering 23 states have been setup across the country. These networks connect have been setup at different schools, colleges, training institutes and other departments. Telemedicine is another important initiative to use

space technology for societal benefits. It has enabled the population, even in the remotest parts, access to super specialty medical care.

Indian Remote Sensing (Irs) Satellite System: Using remote sensing satellites for earth observation was initiated with the design and development of experimental remote sensing satellites Bhaskara-1 and Bhaskara-2 during mid 70s. With seven satellites in operation - IRS-1D, OCEANSAT-1, Technology Experiment Satellite (TES), RESOURCESAT-1, CARTOSAT-1, CARTOSAT-2, CARTOSAT-2A - Indian Remote Sensing Satellite System is the largest civilian remote sensing satellite constellation in the world and provides imageries in a variety of spatial resolutions from better than one meter (CARTOSAT-2 & 2A) to 188 meter (IRS-1D). Forthcoming satellites include OCEANSAT-2, RESOURCESAT-2 and a new Radar Imaging Satellite, RISAT that can overcome the present limitation of imaging under cloudy conditions. Using the data from IRS satellites, a variety of application programmes such as Groundwater Prospects Mapping, Crop Acreage and Production Estimation, Potential Fishing Zone Forecast, Biodiversity Characterisation at landscape level, covering four main biodiversity rich regions of the country - NE Region, Western Himalayas, Western Ghats and Andaman and Nicobar Islands - have been operationalised.

Satellite Launch Vehicles: From launching of modest sounding rockets of the 1960s, India has now acquired capability to launch remote sensing satellites using Polar Satellite Launch Vehicle (PSLV) and geosynchronous communication satellites using GSLV. PSLV is capable of launching more than 1.5 tonne satellite into polar sun-synchronous orbit. Geosynchronous Satellite Launch Vehicle (GSLV) can launch a 2 to 2.5 tonne satellite into Geo-stationary Transfer Orbit (GTO). GSLV has four successful flights out of five missions with the last one being GSLV-F04/INSAT-4CR mission on September 2, 2007. Development of an indigenous cryogenic stage to replace the presently used Russian cryogenic stage has been successfully realised. Flight acceptance test of the cryogenic engine was conducted successfully on December 18, 2008. GSLV-Mk III, which is under development, will be capable of launching satellites weighing four tonne into GTO. Several developments including recoverable and reusable space transportation systems are in progress with the objective of reducing the cost of access to space.

Commercial Successes: Antrix, the commercial arm of the Department of Space, is a single window agency for marketing Indian space capabilities. It is playing a key role in the worldwide availability of IRS data through Geoeye, USA. Antrix also provides IRS data processing equipment. Antrix offers launch services using India's PSLV. So far sixteen satellites have already been successfully launched by PSLV for various international customers. Through Antrix, Telemetry, Tracking and Command support from the Indian ground stations are offered to various satellite operators. Similarly, lease of transponders from INSAT system has been made possible. In this regard, 11 transponders have already been leased to INTELSAT. Customers for the spacecraft components offered by Antrix include world's leading spacecraft manufacturers. During the year, W2M satellite built by ISRO/Antrix under an agreement entered into with EADS Astrium, Paris was launched successfully on December 20, 2008. Besides, Antrix has won contracts from Europe and Asia for launch services in the highly competitive international launch services market. After the successful development of a low cost, compact, modular and rugged Automatic Weather Station (AWS) in co-ordination with industry, the technology has been licensed to industry for regular production.

Ans. 10 (b)

Nanotechnology is useful in Medicine, Energy, Information and communication, Heavy Industry, Consumer goods, Optics, Textiles, Agriculture etc. The biological and medical research communities have exploited the unique properties of nanomaterials for various applications. Terms such as biomedical nanotechnology,

bionanotechnology, and nanomedicine are used to describe this hybrid field. Nanotechnology-on-a-chip is one more dimension of lab-on-a-chip technology. Biological tests measuring the presence or activity of selected substances become quicker, more sensitive and more flexible when certain nanoscale particles are put to work as tags or labels.

The overall drug consumption and side-effects can be lowered significantly by depositing the active agent in the morbid region only and in no higher dose than needed. This highly selective approach reduces costs and human suffering. Nanotechnology can help to reproduce or to repair damaged tissue. "Tissue engineering" makes use of artificially stimulated cell proliferation by using suitable nanomaterial-based scaffolds and growth factors. Tissue engineering might replace today's conventional treatments like organ transplants or artificial implants. Advanced nanotechnology based tissue engineering might lead to some life extension, but not significant amounts--that would require intracellular manipulation of the seven mechanisms of aging, which tissue engineering cannot do. For patients with end-state organ failure, there may not be enough healthy cells for expansion and transplantation into the ECM (extracellular matrix). In this case, pluripotent stem cells are needed.

Chemical catalysis and filtration techniques are two prominent examples where nanotechnology already plays a role. The synthesis provides novel materials with tailored features and chemical properties: for example, nanoparticles with a distinct chemical surrounding (ligands), or specific optical properties. The most advanced nanotechnology projects related to energy are: storage, conversion, manufacturing improvements by reducing materials and process rates, energy saving (by better thermal insulation for example), and enhanced renewable energy sources.

A reduction of energy consumption can be reached by better insulation systems, by the use of more efficient lighting or combustion systems, and by use of lighter and stronger materials in the transportation sector. Currently used light bulbs only convert approximately 5% of the electrical energy into light. [edit] Increasing the efficiency of energy production. Nanotechnology is already impacting the field of consumer goods, providing products with novel functions ranging from easy-to-clean to scratch-resistant. Modern textiles are wrinkle-resistant and stain-repellent; in the mid-term clothes will become "smart", through embedded "wearable electronics". Nanotechnology can be applied in the production, processing, safety and packaging of food. A nanocomposite coating process could improve food packaging by placing anti-microbial agents directly on the surface of the coated film. Nanocomposites could increase or decrease gas permeability of different fillers as is needed for different products. They can also improve the mechanical and heat-resistance properties and lower the oxygen transmission rate. Research is being performed to apply nanotechnology to the detection of chemical and biological substances for sensing biochemical changes in foods. Applications of nanotechnology have the potential to change the entire agriculture sector and food industry chain from production to conservation, processing, packaging, transportation, and even waste treatment. Strategic applications of Nano Science can do wonders in the agriculture scenario. NanoScience concepts and Nanotechnology applications have the potential to redesign the production cycle, restructure the processing and conservation processes and redefine the food habits of the people.

Nanotechnology in India: Several Indian institutes and firms are already working on nanotechnology products for drug delivery, water filters, arsenic removal, reducing water and air pollution, antimicrobial coatings and river cleaning projects, Sen said, and the country must develop guidelines on nanoparticle toxicity and biosafety. Scientists from the Energy Resources Institute in Delhi launched a study to investigate the opportunities and risks associated with the technology. India launched a programme to promote nanoscience and nanotechnology with a budget of 10 trillion Indian rupees (US\$255 million). But although several public and private research institutes are working on DNA chips, carbon nanotubes, nanoparticles such as iron oxide and silver oxide, and

products such as paints and polymers, experts noted a general lack of enthusiasm from Indian industry. There has been no effort to link the technology's potential with development in agriculture and addressing the needs of people in rural areas, who form the backbone of India's economy. For example, nanomaterials could help improve solar cells and biogas reactors.

Government's Initiatives: Nanotechnology is one of the main new developing areas recognized by Indian government in past 5 years and thus there has been a topic of growing interest for companies both domestic and foreign for the various Indian Government policies and incentives to start nanotechnology companies in India. One of the major roadblock to international as well as domestic companies to venture in the nanotechnology field has been a lack of understanding of the government policies in nanotechnology and thus the main objective of this report is to provide the reader a concise and clear idea of the government policies, vital information to widen their scope as well as facilitate their decisions in research or commercial endeavors. It provides an overview of all the government published documents ranging from the Ministry of Commerce and Union budget to the policies of all major government funded institutions. A report mentioned all foreign collaborations initiated by Indian government amongst Indian and Foreign research organizations as well as industry to accelerate the nanotechnology development in India. The report also included the financial incentives as well as intellectual property protection guidelines for any foreign collaboration. The report principally lends assistance to potential investors and to those who are enthusiastic in gaining insight of nanotechnology development and the direction of nanotechnology research in India for the purpose of possible collaborative research efforts or commercial ventures. Indian scientists have called for the development of regulations on the safe use of nanotechnology in healthcare and the environment. The absence of regulations for nanotechnology in India and worldwide is a serious problem.

Ans. 11 (a)

Raising prospects for building a practical quantum computer, physicists at the National Institute of Standards and Technology (NIST) have demonstrated sustained, reliable information processing operations on electrically charged atoms (ions). In the new demonstration, NIST researchers repeatedly performed a combined sequence of five quantum logic operations and ten transport operations while reliably maintaining the 0s and 1s of the binary data stored in the ions, which serve as quantum bits (qubits) for a hypothetical quantum computer, and retaining the ability to subsequently manipulate this information. Previously, scientists at NIST and elsewhere have been unable to coax any qubit technology into performing a complete set of quantum logic operations while transporting information, without disturbances degrading the later processes.

The NIST group performed some of the earliest experiments on quantum information processing and has previously demonstrated many basic components needed for computing with trapped ions. The new research combines previous advances with two crucial solutions to previously chronic vulnerabilities: cooling of ions after transport so their fragile quantum properties can be used for subsequent logic operations, and storing data values in special states of ions that are resistant to unwanted alterations by stray magnetic fields.

Researchers have demonstrated on a small scale all the generally recognized requirements for a large-scale ion-based quantum processor. Previously they could perform all of the following processes a few at a time, but now they can perform all of them together and repeatedly: (1) "initialize" qubits to the desired starting state (0 or 1), (2) store qubit data in ions, (3) perform logic operations on one or two qubits, (4) transfer information between different locations in the processor, and (5) read out qubit results individually (0 or 1).

Through its use of ions, the NIST experiment showcases one promising architecture for a quantum computer, a potentially powerful machine that theoretically could solve some problems that are currently intractable, such as

breaking today's most widely used encryption codes. Relying on the unusual rules of the submicroscopic quantum world, qubits can act as 0s and 1s simultaneously, unlike ordinary digital bits, which hold only one value at any given time. Quantum computers also derive their power from the fact that qubits can be "entangled," so their properties are linked, even at a distance. Ions are one of a number of different types of quantum systems under investigation around the world for use as qubits in a quantum computer. There is no general agreement on which system will turn out to be the best.

The NIST experiments described in Science Express stored the qubits in two beryllium ions held in a trap with six distinct zones. Electric fields are used to move the ions from one zone to another in the trap, and ultraviolet laser pulses of specific frequencies and duration are used to manipulate the ions' energy states. The scientists demonstrated repeated rounds of a sequence of logic operations (four single-qubit operations and a two-qubit operation) on the ions and found that operational error rates did not increase as they progressed through the series, despite transporting qubits across macroscopic distances (960 micrometers, or almost a millimeter) while carrying out the operations. The other significant innovation was the use of three different pairs of energy states within the beryllium ions to hold information during different processing steps. This allowed information to be held in ion states that were not altered by magnetic field fluctuations during ion storage and transport, eliminating another source of processing errors. Information was transferred to different energy levels in the beryllium ions for performing logic operations or reading out their data values.

Ans. 11 (b)

Photovoltaic and wind energy plants, hydroelectric power stations and biogas plants supply energy without polluting the environment. However, they are complex to design and maintain. Virtual reality (VR) makes planning and operation easier. The design engineer's head is spinning. Analyzing data on the computer for hours, with no end in sight is possible. Designing a hydroelectric power station, she would like to know what the pressures, temperatures and fluid flows will be in the facility. She may simulate them with simulation software. However, this only delivers vast columns of numbers or a one-dimensional representation which she will have to analyze bit by bit – a laborious task.

This will get easier in the future. Researchers from the Fraunhofer Institute for Factory Operation and Automation IFF in Magdeburg have developed a method that visualizes the processes inside energy conversion plants, e.g. such as photovoltaic, wind, biogas and hydroelectric power stations. To do so, they have coupled 3-D plant engineering and simulation results with a virtual reality (VR) program developed at the IFF. "A special software tool has enabled us to visualize all the motion sequences for the first time ever – at just the push of a button. Arrows that move through the VR model show engineers the direction in which and speed at which fluids and gases flow through a plant. Colored markings indicate potential weak points such as areas where critical temperatures, deposits or erosions could occur. Is there a potential for collisions when the plant components are moving? The virtual insights facilitate engineering and should therefore ensure that plants become more efficient and have lower emissions.

Ans. 11 (c)

A Supercomputing facility called "Param Sheersh" was inaugurated at the ongoing Indian Science Congress at the North Eastern Hill University, NEHU in Shillong. Prof. MGK Menon, the renowned scientist and the Chancellor of the NEHU, inaugurated the new facility that would benefit the students and teachers engaged in various research activities on the campus.

The PARAM Sheersh Computer System is a Supercomputing facility created by C-DAC, funded by Department of Information technology, Ministry of Communications and Information Technology. This High Performance Computing facility aims at conducting research in strategic areas of Weather, Seismic, Bio-informatics, Physics, Computational Fluid Dynamics, Material Sciences, Life Sciences. The facility shall also serve as a core backbone platform for the students, researchers and faculty members of the region to develop competency skills for solving challenging problems requiring massive computational work especially in the areas of Physics, Chemistry, Mathematics, Bio-informatics, Botany, Zoology and Environmental Science. Open source HPC Applications like WRF, MM5, MOM4, ROMS, COSMOS under Climatology, Quantum Espresso, Abhinit under Physics domain, mpiBLAST, ClustalW under Bio-informatics shall be ported on the systems for conducting research.

Ans. 11 (d)

Ministry of Communication and Information Technology recently launched the tele-medicine application through Common Service Centres (CSC). The integration of CSC services with 'e-Sanjeevani', a tele-medicine software package for remote diagnostics and tele-counselling was showcased at New Delhi. The software is targeted to be deployed as a cost effective tele-medicine tool for rural area at 100,000 CSCs being set up as part of the country's National e-Governance Plan. e-Sanjeevani, a web based software, facilitates creation of Electronic Medical Record (EMR) for variety of diagnostic reports e.g. ECG, pathological reports, radiological examination (X-ray, CT Scan, MRI etc.). The patient record is secured through encryption. A highlight of the tool is that it enables multipoint, multi referral consultation, as well as one-to-one consultation between patient to doctor and doctor to doctor. The programme enables anywhere, anytime access with zero installation cost for the user. The combination of CSCs across the country along with the potential offered by e-Sanjeevani is expected to significantly enhance the outreach of health care to the rural masses. With this initiative a large number of villagers will be able to have their health records in electronic form, accessible anytime from anywhere. Village Level Entrepreneurs(VLEs) with minimum training in handling ECG machines and other devices will be able to handle the medical equipment co-located at CSCs. The e-Sanjeevani , a software package has been developed by the C-DAC, Mohali. C-DAC, Mohali has established a tele-medicine network in Punjab and Haryana linking remote Sanjeevani Health Centres to Referral Facilities.

Ans. 12 (a)

Stands for "Network Address Translation." NAT translates the IP addresses of computers in a local network to a single IP address. This address is often used by the router that connects the computers to the Internet. The router can be connected to a DSL modem, cable modem, T1 line, or even a dial-up modem. When other computers on the Internet attempt to access computers within the local network, they only see the IP address of the router. This adds an extra level of security, since the router can be configured as a firewall, only allowing authorized systems to access the computers within the network.

Ans. 12 (b)

Robotic therapy can potentially help reduce impairment and facilitate neuro-development of youngsters with cerebral palsy. Krebs and others at MIT, including professor of mechanical engineering Neville Hogan, pioneered the use of robotic therapy in the late 1980s, and since then the field has taken off. The MIT team is focusing on improving cerebral palsy patients' ability to reach for and grasp objects.

Ans. 12 (c)

Scientists at the University of Missouri have developed the ability to take regular cells from a pig's connective tissues, known as fibroblasts, and transform them into stem cells, eliminating several of these hurdles. Since these "induced pluripotent stem cells" were not derived from embryos and no cloning technique was used to obtain them, the approach eliminates some of the controversy that has accompanied stem cell research in the past.

Ans. 12 (d)

A compression/decompression utility that lets Windows users make their files smaller for faster transfer over the Internet. This utility also decompresses files that were originally compressed using PKZIP or other formats.

Ans. 12 (e)

The 2009 flu pandemic is a global outbreak of a new strain of influenza virus, officially named the "new H1N1", first identified in April 2009, and commonly called "Swine flu." It is thought to be a mutation of four known strains of the influenza A virus, subtype H1N1: one endemic in (normally infecting) humans, one endemic in birds, and two endemic in pigs (swine). The outbreak began in Mexico, with evidence that Mexico was already in the midst of an epidemic for months before the outbreak was recognized. The virus has since spread to the Southern Hemisphere which entered its winter flu season, and to many less developed countries with limited healthcare systems.