



UPSC

2012 - MAINS PAPER - II

1. Answer any four of the following in about 250 words each: (25×4=100)

- Do you think that China's emergence as one of the largest trading partners of India had adversely affected the settlement of the outstanding border problem?
- Discuss the globalization of R&D and its impact on India's development. Provide an illustration from at least one sector such as Information Technology or Health.
- Discuss the contentious issues that have caused the prolonged constitutional logjam in Nepal.
- The human population is slated to grow to 9 billion by 2050. In this context, many scientists predict that plant genomics would play a critical role in keeping out hunger and preserving the environment. Explain.
- "The situation today is far different to that prevalent fifty years back when the Indus Water Treaty was signed." Highlight the complexity of the current challenges on both sides of the border in this regard. Do you think that a review of the Treaty is in India's best interests?

2. Answer any five of the following in about 150 words each: (15×5=75)

- Write a short analytical note on Indian Diaspora. How is the "New Diaspora" different from the "Old Diaspora"?
- Why have the resource rich African and South Asian countries remained poor for decades? Explain.
- Does Putin's return as President of Russia mark a shift to a confrontationist stance in international diplomacy towards the West?
- Analyse critically the interlinkages between the Convention on Biological Diversity and FAO Treaty on Plant Genetic Resources for Food and Agriculture.
- Critically review the international concern in achieving the targets set for the Millennium Development Goals.
- Discuss the likely negative impact of the protectionist measures proposed by the US on India's software industry.

3. Answer any six of the following in not more than 100 words each: (10×6=60)

- In the context of Assisted Reproductive Technologies, India has emerged as a hub of commercial surrogacy. What key biological, legal and ethical issues merit consideration while framing the regulation to govern surrogacy in India?
- Why is international trade perceived to have failed to act as an "engine of growth" in many developing countries including India?
- Despite strict prohibitory regulations, "doping" has become increasingly common amongst athletes. Name five commonly used performance-enhancing drugs. What are the risks associated with their use?



UPSC

2012 - MAINS PAPER - II

- d) Compare the significance of IBSA and BRICS in the context of India's multilateral diplomacy.
- e) The safe landing of the "Curiosity" Rover under NASA's space programme has sparked many possibilities. What are those and how could humankind benefit from them?
- f) How have the US sanctions against Iran affected India's bilateral relations with Iran?
- g) What is Permaculture? Give at least three common examples where permaculture concepts are being put to use.
4. Answer the following in not more than 50 words each: (5×6=30)
- a) The Sequoia supercomputer was launched this year. What are its specific features and what is its purpose?
- b) What is meant by the G8+5 group?
- c) The Human Papilloma Virus vaccine has been making the headlines in the recent months. Who make the ideal candidates for receiving this vaccine and what are its benefits?
- d) What are India's stakes in the South China Sea?
- e) Explain the concepts "Environmental Sustainability" and "Sustainable Development of People".
- f) Explain briefly the "Clean Development Mechanism" as provided under the United Nations Framework Convention on Climate Change (UNFCCC).
5. (a) The following table gives the number of mistakes made by 16 data entry clerks who enter medical data from case report forms. The column Entered indicates the number of values entered, and the column Errors gives the number of coding errors that were detected among these.

Entered	Errors
4434	35
4841	42
6280	15
1958	28
7749	36
2829	42
4239	18
3303	54
5706	34
3770	40
3363	36
1740	23



UPSC

2012 - MAINS PAPER - II

3404	27
1640	26
3803	56
1529	20

- Make a scatter-plot of these data. Which do you choose for the response and which for the explanatory variables? Describe any patterns.
- Does the scatter-plot indicate any relation between the two variables?
- One analyst concluded, "The clerks who enter more values make more mistakes. Evidently they become tired as they enter more values." Is this an appropriate conclusion? (9 marks)

(b) The following table provides the Rural and Urban population of West Bengal according to the Censuses of 1921-1951. (Population in Lakhs) :

Census-year	Rural	Urban
1921	139.94	24.32
1931	147.92	28.97
1941	171.97	46.79
1951	200.25	62.82

- Construct a suitable diagram to compare the population figures.
 - Comment on the changes in populations. (6 marks)
- (c) Suppose milk is being sold at the rates of 18, 20, 22 and 25 rupees per litre in four different months. Assuming that equal amounts of money are spent on milk by a family in the four months, using a suitable measure, determine the average price in rupees per litre. (2 marks)
6. (a) (i) Determine the median and mode for the following distribution of monthly income for 580 middle-class people of a country:

Monthly income in Rs. Thousands	Frequency
25-30	53
30-35	81
35-40	114
40-45	195
45-50	63
50-55	32
55-60	20
60-65	11
65-70	8
70-75	3

(ii) Also obtain an approximate value of the mean income from the values of median and mode.

(iii) Comment on the nature of the income distribution. (8 marks)

(b) From the frequency distribution of height for 177 Indian adults given below, draw the 'more than type' ogive. Also locate the position of the median. (3 marks)

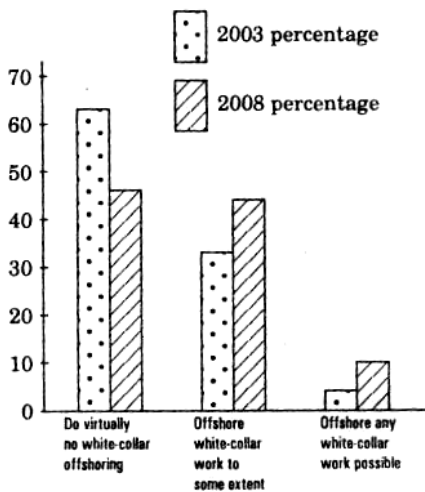
Height (cm) Class	Interval Frequency
144.55-149.55	1
149.55-154.55	3
154.55-159.55	24
159.55-164.55	58
164.55-169.55	60
169.55-174.55	27
174.55-179.55	2
179.55-184.55	2

(c) A survey of 1000 large U.S. companies conducted by a Research Organisation asked their

level white collar jobs to countries outside the U.S. The following table shows the percentage that indicated a certain action. The data for 2003 are real, the data for 2008 are speculative. (7 marks)

Plan to	2003(%)	2008(%)
Do virtually no white-collar offshoring	63	46
Offshore white-collar work to some extent	33	4
offshore any white-collar work possible	4	10

The following Bar chart with side-by-side columns summarizes the data:



i. Does the Bar chart compare the impression of any anticipated in outsourcing of the white collar jobs?

ii. Does the mode differ from the median for the distribution of percentages in 2003 and 2008?