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## GENERAL STUDIES (M): 2012

MOCK TEST (5)

Test Code: M105

Time Allowed: Three Hours

Maximum Marks: 300

### INSTRUCTIONS

*Answer must be written in the medium specified in the Admission Certificate issued you, which must be state clearly on the cover of the answer book in the space provided for the purpose . No Marks will be given for the answers written in a medium other than that specific in the Admission Certificate.*

*Candidate should attempt all questions strictly in accordance with instructions given under each question.*

*The number of marks carried by each question is indicated at the end of the question.*

103 , 1st Floor , Ansal Building , Behind UCO Bank  
Dr. Mukherjee Nagar , Delhi -110009

### INNOVATIVE ASSESSMENT SYSTEM™

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### MAINS TEST SERIES 2012

### ANSWER WRITING SKILL DEVELOPMENT

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General Studies , Philosophy , Sociology , Public Admn,  
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Email : [ajay.visionias@gmail.com](mailto:ajay.visionias@gmail.com) # 9650617807 ,9968029039

**1. Answer any two of the following in about 250 words each.**  $20 \times 2 = 40$

(a) What is drug resistance and why it is evolving into a serious community health problem? Explain briefly the various mechanisms of acquiring and spreading of drug resistance. Examine India's role in global drug resistance scenario. What steps do you propose to fight the drug resistance?

(b) The proposed BRAI Bill is against the interest of our country which has a large population earning their living by farming. Comment.

(c) Explain and establish a relationship among CERN, LHC, Higgs Boson, Higgs Field, God Particle, Particle Physics, Standard Model Theory, OPERA, ATLAS, CMS. What will happen if we find or don't find Higgs boson?

**2. Answer any one of the following in about 150 words each.**  $15 \times 1 = 15$

(a) Discuss the status of programs taken up by the Ministry of New and Renewable Energy (MNRE) on New Technologies.

(b) Critically evaluate the statement, "Indian Foreign Policy in West Asia has been a balancing act". Support your answer with relevant examples.

**3. Answer any three of the following in about 150 words each.**  $12 \times 3 = 36$

(a) What are the various government initiatives and programmes to promote research & development in nano-electronics in India?

(b) Differentiate among Blue Biotechnology, Green Biotechnology, Red Biotechnology and White Biotechnology.

(c) Discuss in detail the initiatives of the National Mission on Enhanced Energy Efficiency.

(d) What are the threats and constraints to Biodiversity Conservation? Illustrate with examples.

**4. Answer any four of the following in about 125 words each.**  $10 \times 4 = 40$

(a) Elucidate the difference between Automation and Robotics.

- (b)** Discuss the various techniques, which are employed to derive energy from the waste material.
- (c)** Recently there has been a major controversy about Bio-Fuel, particularly about jatrophacurcas. In the wake of this controversy, discuss the future of Bio-Fuels in India.
- (d)** What do you understand by 'IPv6' standard for internet? What were the shortcoming in earlier IPv4 standards which led to the adoption of IPv6 and how IPv6 overcomes those shortcomings?
- (e)** What is Deep-sea mining and why it is gaining importance in the recent times? Discuss the few techniques for deep-sea extraction.
- 5.** *Answer any three of the following in about 125 words each.*

$$10 \times 3 = 30$$

- (a)** Discuss the various Phytoremediation processes.
- (b)** What is Rehabilitation Robotics? Give some of its practical applications.
- (c)** What do you understand by Quasicrystals? What are their current and future applications in everyday world?

- (d)** Write about the various areas of major focus and major upcoming projects undertaken by ISRO. How far can they be helpful in development of our nation?

- 6.** *Answer any seven of the following in about 50 words each.*

$$5 \times 7 = 35$$

- (a)** Central Water Commission (CWC)
- (b)** Differentiate between Eclipse, Occultations and Transit
- (c)** Fly Ash: Composition and Application
- (d)** Mars Science Laboratory (MSL)
- (e)** Global Warming Potential
- (f)** National Large Solar Telescope (NLST)
- (g)** WEB 3.0
- (h)** Fuel Cells

- 7.** *Answer any seven of the following in about 50 words each.*

$$5 \times 7 = 35$$

- (a)** UHDTV
- (b)** Smart Grid
- (c)** Global Burden of Disease (GBD)
- (d)** The Square Kilometre Array (SKA)

- (e) Space solar power
  - (f) Space Law
  - (g) Probiotic: Effects and Side Effects

**8.** *Answer any three of the following in about 20 words each.*

$$2 \times 12 = 24$$

- (a) LaBL Campaign**
  - (b) Certified Emission Reduction Unit (CER)**
  - (c) Carbon leakage**
  - (d) BrahMos-II**
  - (e) DATE(Data Analytics for Tracking Epidemics)**
  - (f) The Thirty Metre Telescope (TMT)**
  - (g) Eutrophication**
  - (h) BIONEEM**
  - (i) watson computer**
  - (j) Swumanoid**
  - (k) IBM Sequoia**
  - (l) ‘DNSChanger’**

**9.** *Answer any ten of the following in about 20 words each* **2x10=20**

$$2 \times 10 = 20$$

- ### (a) Flame Virus

- (b) Biomedical Engineering
  - (c) Hydraulic Fracturing
  - (d) Genetic Testing
  - (e) NEOWISE Space Infrared Survey:
  - (f) SARAL
  - (g) VIKRAM
  - (h) Aditya
  - (i) Black hole and white hole
  - (j) Acid Shock
  - (k) ECO MARK
  - (l) HOSPIRIMO

**10. Answer the following:**

- (a)** What is the relation between Mean, Median and Mode? The Median and Mode for a Moderately skewed distribution are 20.6 and 26 respectively, find the Mean.

2

- (b)** What is the significance of "5 sigma" accuracy in statistics? Why it was recently in news? 2

2

- (c)** What do you understand by Quartile and interquartile range (IQR)? Find the IQR for following data 2

Expenditure (Rs.)	No. of families
100 - 150	10
150 - 200	20
200 - 250	30
250 - 300	20
300 - 350	10
350 - 400	5
400 - 450	2
450 - 500	1

No. of families

14

- |       |    |
|-------|----|
| 10-20 | 12 |
| 20-30 | 27 |
| 30-40 | 18 |
| 40-50 | 15 |
- (d) If product-moment correlation coefficient between two variables X, Y is zero, what does it signify? 2
11. (a) The table below shows the average monthly household expenditure on different items for the years 2001 to 2004: 4

Average Monthly Expenditure in Rupees				
Item	2001	2002	2003	2004
Food	4,500	4,800	5,4000	5,700
Rent	1,800	1,800	2,200	2,300
Children's Education	650	800	1,000	1,200
Others	2,400	2,600	3,000	3,400

Represent the above information by suitable diagram.

11. (b) According to the Union Budget 2004-05, the total receipts Rs. 4,77,829 crore can be approximately broken up as follows. 4
- A. Direct Taxes
  - B. Indirect and other Taxes
  - C. Non-Tax Revenue Receipts
  - D. Non-debt Capital Receipts
  - E. Borrowings and other liabilities
- 25%  
32%  
13%  
6%  
24%
- Represent the above by a suitable diagram.

12. (a) The following table shows the IQ scores of adolescents, aged 15-17 years: 6

Interval	Frequency
121 and above	15
116 – 120	35
111 – 115	50
106 – 110	60
101 – 105	100
96 – 100	75
91 – 95	70
86 – 90	60
81 – 85	25
80 and below	10

Find:

- (i) the cut-off point above which 25% most intelligent adolescents fall.
- (ii) the cut-off point below which the 25% least intelligent adolescents fall.
- (iii) Find the mode of this distribution.

- (b) Suppose that the regression line of two random variables y and x is given by:

$y = 26.38 - 1.35x$  and that of x and y is given by  $x = 16.38 - 0.45y$ . Find the square of the coefficient of correlation between x and y. 5