

CENTRE FOR POLICY STUDIES, IIT BOMBAY

PhD Entrance Test Paper

PART – I: Aptitude, English, Data Interpretation, Policy MCQs

Venue: LC 101

Time: 9 to 11am

Date: 13th May 2017

Duration: 50 minutes

CPS Serial No.:

Dept. Reg. No.: RPS2017 _____

Q. No.	1 to 10	12	13	14	15	16	17	18 to 22	22 to 32	Total
Marks										

Answer the following questions (1 Mark each):

1. On Saturday afternoon, Anil sent m text messages each hour for 5 hours, and Sunil sent p text messages each hour for 4 hours. Which of the following represents the total number of messages sent by Anil and Sunil on Saturday afternoon?

A) $9mp$

B) $20mp$

C) $5m + 4p$

D) $4m + 5p$

Answer: _____

2. If $3x - y = 12$, what is the value of $8^x/2^y$?

A) 2^{12}

B) 4^4

C) 8^2

D) The value cannot be determined from the information given.

Answer: _____

3. Anjana bought a laptop computer at a store that gave a 20 percent discount off its original price. The total amount she paid to the cashier was p rupees, including an 8 percent sales tax on the discounted price. Which of the following represents the original price of the computer in terms of p ?

A) $0.88p$

B) $p/0.88$

C) $(0.8) \times (1.08)p$

D) $p/\{(0.8) \times (1.08)\}$

Answer: _____

4. In a mixture of 60 litres, the ratio of milk to water is 2:1. If this ratio is to be 1:2, then the quantity of water to be further added is:

A) 20

B) 30

C) 40

Answer: _____

D) 50

E) 60

5. A train traveling at 60 km per hour enters a tunnel that is 5 km long. The train is 1000m long. How many minutes does it take for the whole train to pass through the tunnel?

A) 7

B) 4

C) 10

Answer: _____

D) 5

E) 6

6. A couple has two children. The probability that both children are girls is p_1 and the probability that both children are girls if the eldest is a girl is p_2 . Which of the following is true?

A) $p_1 = 1/2$ and $p_2 = 1/2$

B) $p_1 = 1/4$ and $p_2 = 1/2$

C) $p_1 = 1/2$ and $p_2 = 1/4$

Answer: _____

D) $p_1 = 1/4$ and $p_2 = 1/4$

E) $p_1 = 1/4$ and $p_2 = 1$

7. The average Indian taxpayer has a 5 percent chance of being randomly selected for an audit. Of those being audited, 70 percent are found to have underpaid their taxes and will have to pay extra. What percentage of all taxpayers will have to pay extra following an audit?

A) 0.35%

B) 3.5%

C) 35%

Answer: _____

D) 7.5%

E) None of the above

8. The floor space in a certain market is rented for \$15 per 30 square feet for one day. In the market, Riya rented a rectangular floor space that measured 8 feet by 15 feet, and Leena rented a rectangular floor space that measured 15 feet by 20 feet. If each woman rented her floor space for one day, how much more did Leena pay than Riya?

- A) \$27
B) \$36
C) \$54
D) \$90
E) \$180

Answer: _____

9. If $(5^{5x}) \cdot (25) = 5^n$ where n and x are integers, what is the value of n in terms of x ?

- A) $5x + 1$
B) $5x + 2$
C) $5x + 5$
D) $10x$
E) $10x + 2$

Answer: _____

10. A straight fence is to be constructed from posts 6 inches wide and separated by lengths of chain 5 feet long. If a certain fence begins and ends with a post, which of the following could not be the length of the fence in feet? (12 inches = 1 foot).

- A) 17
B) 28
C) 35
D) 39
E) 50

Answer: _____

Table 1: Comparative data for select countries

Country	India	China	Brazil	Japan	South Africa	UK	USA
Population (million)	1230	1338	199	128	51	63	309
GDP/capita (constant 2010\$)	1657	6101	2209	5700	375	2430	14964
Unemployment (% of labour force)	3.9	4.1	6.7	5.7	24.9	7.8	9.6
Electricity kWh/capita	642	2944	2339	8595	4564	5701	13394
Electricity (% of coal supply)	67.2	77.2	2.2	27.2	94.3	28.7	45.8
Energy imports (%)	28	11.4	7.2	80.1	-15.7	26.6	22.2

(Source: World Bank Data indicators, 2010)

Based on Table 1 answer the following questions:

11. Which country has the highest total income and the highest average income? (1 Mark)

12. Which country has the lowest average income? Is this due to unemployment? (2 Marks)

13. India has the lowest unemployment rate, is unemployment not an issue for India?
Explain (~150 words). (3 Marks)

14. Which country has the largest quantity of coal being used in the electricity sector?
Estimate the annual coal based electricity generation for this country. (2 Marks)

15. The electricity use per GDP reflects the electricity intensity. Which country has the lowest and highest electricity intensity? (2 Marks)

16. If a country has a lower electricity intensity than another, does it imply that the country is more efficient? Explain your answer (~150 words). (3 Marks)

17. What is common to South Africa, China and India in terms of the energy mix? What are the differences in the energy situation? (3 Marks)

Read the passage below and answer the following questions (1 Mark each):

"The desire to alter the distribution of living standards is an important motive for policy intervention. One criterion by which we judge whether that distribution has improved is whether minimal needs of individuals for nutrition and other essential forms of consumption have been met. Our concern here is with a class of policies whose main aim is to raise incomes of the poor rapidly, for which a sacrifice of other social objectives is to be expected. Resources are available to alleviate poverty; how should they be allocated?"

In principle, any scheme to alleviate poverty has both transfer benefits and stabilization benefits for the poor. The transfer benefits can be both direct - the gross benefit to participants less any cost they incur in participating - and indirect - including the share of the poor in the extra income generated by the scheme's outputs, and any other second-round effects on income from other sources. The stabilization benefits arise mainly from the scheme's effect on the risk facing the poor of a decrease in consumption. Plainly, the benefits of any policy that lessens downside risks of those near the edge of survival must be valued very highly. Both transfer and stabilization benefits should be considered in evaluating these schemes.

In defining objectives and evaluating outcomes we may need to be precise about the meaning, and measurement, of poverty. In some instances, a ranking of the distributions of income before and after a policy reform suffices. The subtleties of measuring poverty would then be irrelevant. But some difficult policy issues rest on assumptions (including ethical value judgments) embodied in various measures of poverty. There is an important distinction between the concern about the prevalence of poverty, as measured by the number or proportion of poor, and about the depth or severity of poverty, which also considers how living standards are distributed below the poverty line. The judgments made about issues of measurement can have bearing on policy choices."

(Source: Ravallion, Martin. "Reaching the rural poor through public employment: arguments, evidence, and lessons from South Asia." *The World Bank Research Observer* 6.2 (1991): 153-175.)

18. What is the criteria by which we judge that distribution of living standards has increased?

- A) Whether minimal needs of individuals for nutrition and other essential forms of consumption have been met
- B) Whether living standards are distributed below the poverty line
- C) Whether resources for poverty alleviation are allocated properly
- D) None of the above

Answer: _____

19. Subtleties of measuring poverty would be irrelevant if

- A) An important distinction between depth or severity of poverty and the number or proportion of poor is considered
- B) a ranking of the distributions of income before and after a policy reform suffices
- C) transfer and stabilization benefits are be considered in evaluating an anti-poverty schemes
- D) all of the above

Answer: _____

20. According to the above passage, what is an important motive for policy intervention for alleviating poverty?

- A) The need to be precise about the meaning and measurement of poverty.
- B) The need or motivation to change the distribution of living standards
- C) Both of the above
- D) The need to allocate resources appropriately

Answer: _____

21. Any scheme to alleviate poverty has transfer benefits that can be direct or indirect. Indirect benefit(s) include(s):

- A) proper resource allocation saving money for the government
- B) benefits for the private sector
- C) only second round effects on poor people's income from other sources
- D) second-round effects on poor people's income from other sources, *and* poor people's share in extra income generated by the scheme's outputs

Answer: _____

22. This paper states that assumptions (including ethical value judgments) embodied in various measures of poverty have a bearing on policy choices.

- A) These judgments affect how we measure poverty
- B) These judgments only affect measurement of how living standards are distributed below the poverty line
- C) These judgments have not impact on choice of measures of poverty
- D) These judgments only help us when we wish to raise the incomes of those above the poverty line

Answer: _____

Answer the Following Questions based on the choices given (1 Mark each):

23. Which institution makes the decision about the selection of judges of the Supreme Court of India?

- A) Govt. of India
- B) President
- C) Collegium of Judges
- D) Chief Justice of India

Answer: _____

24. What is the third list of subjects provided in the constitution, apart from the State List and Union List?

Answer: _____

25.What is the name of the main program of Government of India providing different health, nutrition, and educational services to children under the age of 6 years and their mothers?

- A) National Nutrition Policy
- B) Integrated Child Development Services (ICDS)
- C) National Nutrition Mission
- D) Beti Bachao Beti Padhao (BBBP)

Answer: _____

26.Name the sector in which ASHA works as the grassroots-level functionary in India?

- A) Education Sector
- B) MGNREGA (Rural Employment Scheme)
- C) Agriculture Sector
- D) Health Sector
- E) Sanitation

Answer: _____

27.What is the policy instrument that has the 'force of law' but not ratified by a legislature, and has a limited life-span?

- A) A Law
- B) An Amendment
- C) An Ordinance
- D) A Policy

Answer: _____

28.What is the criticism of Section 377 of the Indian Penal Code?

- A) Criminalization of Same-Sex relationship
- B) Violation of Freedom of speech
- C) Exploitation of child labour (minor labour)
- D) Violation of tribal right act

Answer: _____

29.Which Indian state/s was/were the main bone of contention between China and India, recently?

- A) Sikkim
- B) Arunachal Pradesh
- C) Assam
- D) All of the above

Answer: _____

30.What were the De-notified Tribes in India, de-notified from?

- A) The list of Schedule Tribes
- B) The List of Criminal Tribes
- C) Forest Rights Act
- D) None of the Above

Answer: _____

31.What does Article 370 of the Indian Constitution provide for?

- A) Provides for the Special Autonomous Status (or Autonomy) to North Eastern States of India
- B) Gives fundamental right to the citizen on Freedom of Speech
- C) Provides for the Special Autonomous Status (or Autonomy) to J & K state
- D) None of the above

Answer: _____

32.Name one of the central (or union) level regulatory agencies and the sector or substantive area it regulates, which was established post 1990s? (2 Marks)

Regulatory institute: _____

Sector: _____

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Rough Work

CENTRE FOR POLICY STUDIES, IIT BOMBAY

PhD Entrance Test Paper

PART – II: Policy Aptitude Test (Part A and B)

Venue: LC 101

Time: 9 to 11am

Date: 13th May 2017

Duration: 70 minutes

CPS Serial No.:

Dept. Reg. No.: RPS2017_____

	Part - A					Part - B									
Q. No.	A	B	C	D	e	1	2	3	4	5	6	7	8	9	Total
Marks															

Part - A

Write a short note on any policy issue and policy solution in your area of interest

- a) Briefly explain the policy problem (150 - 175 words) (5 Marks)

cribed policy solution, addressing various dimensions of the problem

(4 Marks)

the on-ground performance of the policy? (100 words) (4 Marks)

d) What is your assessment of policy and the existing solution? (100 words) (4 Marks)

e) What are your recommendations for improving it? (75 words) (3 Marks)

Maximum of 500 words (+/- 10%)
Mention the word count: _____

Part - B

Read the following paragraph and answer the questions (Any one of the paragraphs)

Paragraph -1 (Attached)

Please answer the following questions based on the information provided in the paragraph (Please note that only short answers (a word or a short phrase) are expected).

- 1 What is the core indicator/measure of the abundance of solar energy available in India? (Mark 1)
- 2 Why do you think the author call the solar energy as “the alpha of all energy forms”? (Marks 2)
- 3 Which Indian state is called “acclaimed hub for most solar power plants in India”? (Mark 1)
- 4 State one of the two possible drivers, mentioned by authors, helping increase the demand for solar home systems in India. Explain why? (Marks 4)

- 5 What according to authors are the environmental advantages of solar energy? (State any Three) (Marks 3)
- 6 What factors are expected to increase India's overall demand for electricity? (State any Two) (Marks 2)
- 7 Which, according to the authors, is the task of public policy in which the Indian government agencies have failed to perform in a significant manner? (Mark 1)
- 8 What behavioral aspect or perception acts as a major barrier to the dissemination of solar energy in India? (Mark 1)
- 9 What is the strategic advantage provided by solar energy to India? (Marks 3)

OR

Paragraph -2 (Attached)

Please answer the following questions based on the information provided in the paragraph (Please note that only short answers (a word or a short phrase) are expected).

- 1 What is the type of programs deployed to tackle the problem of child marriage other than the schemes for conditional cash/ resource transfer? (Mark 1)
- 2 What, according to authors, are adverse social impacts of child marriages (State any two)? (Marks 2)
- 3 Mentions and schemes and the core concern of the author about the scheme of conditional case transfer for delaying marriage? Explain. (Marks 3)
- 4 What is the inherent nature of the conditional transfer programs, according to the authors? (Marks 2)

A Take on Solar Power in India

KAWALJEET KAUR KAPOOR, YOGESH K DWIVEDI

Rising focus on the increasing awareness of existing solar systems, ambitious plans announced on the amount of solar power generation over the next few years, cancellation of subsidies over a considerable period and their reintroduction, and of course, the “solar scam” are some of the issues at the forefront of green energy in India.

India is a fast growing economy, but power scarcity and diminishing sources of coal and other domestic gases is taking over the country. The rapidly emerging manufacturing sector and increasing energy demand at the domestic front have turned India's attention towards sustainable energy forms like never before. The country's economic growth, its rapid urbanisation, and the gradual increase in its per capita consumption are all expected to sizeably increase India's overall demand for electricity. Indian government has announced that it will achieve the 100 gigawatts (GW) solar power target by 2022. With 8.1 GW, India's installed solar capacity has experienced an 80% growth since September 2015 (ETEnergyworld 2016).

Conversion of radiations from the sun into electrical energy mostly using photovoltaic cells results in solar power. Geographically, India is a very fitting choice for solar power generation. It is a tropical country and much of it is conveniently located near the equator. It has ideal conditions for harnessing solar power, receiving as it does almost 300 days of sunshine a year (this approximates

to about 5,000 trillion kilowatt of power). Regarded as the alpha of all energy forms, solar energy can be used in two basic ways—one being the thermal form for drying, heating, cooking, generating electricity, and the other being the photovoltaic form, whereby solar energy is converted to electricity usable for lighting, pumping, and so on. It is pollution-free, comes with a virtually inexhaustible supply, and has a global spread; all of these make solar a hugely attractive form of energy in these times of global warming (EAI 2013).

In the Future

Increased interest is now being invested in the solar side of power generation, and India is joining the solar league with numerous solar power projects, many of which have already been commissioned. The Indian government has introduced various schemes and policies to rightfully utilise the enormous amount of solar energy available within the country. In September 2013, the Government of India (GoI) announced plans for building an ultra-mega 4 GW solar power plant in Rajasthan. This project is being called the world's first of this scale, which is expected to become a trendsetter in large-scale solar power projects. Rajasthan is the acclaimed hub for most solar power plant projects in India. Gujarat is another state with the highest potential for solar

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power generation, with sufficient availability of land for setting up solar power plants. A *New York Times* report by David Ferris highlights that India's solar ambitions have massively grown over the recent years. It is also forecasted that the Indian solar market could be worthy of billions of dollars over the next few years, tentatively over the next 10 years. The emphasis will have to be largely based upon the execution, financing, and localisation of any and all undertaken solar projects. Contrastingly, the local players in this case, are expected to dominate the downstream solar industry in the initial years (Ferris 2013). An October 2013 *Bloomberg* news report states that with this ultra-mega solar power plant plan, India is aiming to sell power at a record low rate. Solar tariffs for large projects were recorded at as low as ₹4.34 per unit (Nandi 2016).

Millions of Indians survive on off-grid solar home systems; average sales for these devices have increased by 47%, annually, from 2012 to 2016, supplying energy for over 90,000 homes (Clover 2016). In promoting their solar components, Tata Power estimates that remote sections of the country suffering from 'poor or no electricity may show the

highest adoption rates for solar power. The urban parts are also expected to have high adoption rates, owing to power cuts, especially during summers. The Maharashtra government has also authorised a 150 megawatts (MW) power project, the largest photovoltaic project in India. They are also bringing in four solar power parks in the state to meet the state's power requirements, with aids from public-private partnership scheme and the Asian development bank.

Acclaimed Advantages

In a seminar organised by the Ministry of New and Renewable Energy (MNRE), solar experts observed that the higher adoption of solar power in India will not only reduce its dependency on fossil fuels, but will also assist in lowering energy costs and increasing business and job opportunities within the country. They recognised the significant reduction in greenhouse gas emissions as the greatest advantage of increased solar power adoption in India (Deccan 2013). In terms of its other advantages, solar power offers substantial returns on investment; it is highly environment friendly, potentially non-polluting, involves no noise and has a zero carbon footprint; it

also eventually becomes free after the initial capital investment; it is long-lasting, in that, it comes with a long life of almost 20 to 25 years; given that the solar panels have no associated moving parts, and require no fuelling or replacement of parts (as there is virtually no wearing out), these systems require minimal to no maintenance; again, since the source for harnessing this form of energy is solely the sun, there is no typical need for gaining access to the source, like in other cases of digging up coal, gases and oils.

Challenges

The last few months of 2013 saw several media reports claiming the cancellation of subsidies for solar installations as the major cause behind its retarded adoption in India. A handful of news articles (*Hindustan Times* 2013; India Solar Market 2013) reported that numerous solar power companies are blaming the government for not releasing the promised subsidies, and that lack of subsidies is having a direct negative impact on solar power adoption in India. A July 2013 *Times of India* report lists multiple cases where the Tamil Nadu government failed to comply with declarations made on solar

subsidies—for instance, after subsidies were announced, there was no communication on how these subsidies would reach the masses (Sushma 2013). Owing to increased power cuts, residents are willing to use rooftop solar systems, but the unclear central and state subsidy issues stand in the way of solar adoption within the country. This is not only having an impact on household solar adoption, but has also been reported of having a negative impact on commercial and industrial solar adoption. Subsidies were introduced to motivate solar power adoption, but these subsidies are acting otherwise and snagging the entire adoption process. However, as of February 2016, the Indian government has restarted its 30% subsidy on the capital cost of installing a plant. This incentive excludes commercial projects, and offers generation based incentives only to household/charitable projects, including the 30% subsidy from MNRE (Nandi 2016).

Awareness amongst consumers is also recognised as a challenge in this context. When it comes to solar systems and their diffusion, consumer perceptions have received considerable attention from the critics and argued to be affected by various factors (Kapoor et al 2014). In addition, to the convoluted subsidy programmes and poorly managed financing options, there are a number of other challenges associated with the regulation of solar power in India. To broadly list a few, there is the paucity of land, which is typically unavailability of per capita land for solar installations; high installation costs; lack of trained personnel to manage and drive the solar industry; and of course, the need to rightly educate consumers on the economics associated with the usage of solar power (EAI 2013). Industry experts have particularly pointed at the need for rectifying the big misconception that people have, which is, solar power is very expensive (Panchabuta 2013).

Studies like those done by Ansari et al (2013) identify higher net payback period of power plant installations, lower efficiency in terms of not all absorbed solar radiations by the photovoltaic cells are converted into electricity, requirement of backup power devices during limited

or no sunlight days, lack of favourable financing options, absence of an adequate market for green electricity, insufficient political involvement and support, inadequate government policies, and no substantial research and development in this field, as the other barriers to solar power plant installations in India.

Government Policies and Aids

Some of the government bodies actively promoting and supporting solar power projects in India are the MNRE, the Solar Energy Centre (SEC), the Indian Renewable Energy Development Agency (IREDA), and others. As future aids to boost the country's solar power adoption, the government is introducing new schemes and plans, a few of which have been documented here—as of February 2016, the Delhi government has announced a generation-based incentive (GBI); according to this incentive, the government will pay ₹2 per unit of solar energy produced for household consumers and charitable organisations (Nandi 2016). This incentive has been released for a two-year period as of now, and is expected to accelerate adoption of solar systems amongst domestic users; the Himachal Pradesh government has also geared up to introduce 70% subsidy for people installing solar photovoltaic lights (TNV 2016); the state government in Odisha is targeting to generate 70 MW of solar power by 2022. This includes installing rooftop panels for about 15 towns within the state (Behera 2016). Also, the cabinet

has issued clearance for viability gap funding for 5,000 MW solar power projects, which will be issued in terms of partial payment from the government for setting up solar panels. This will be mostly in the private sector, on a build-own-and-operate basis, with an aim of adding on to grid power being generated in the country (Jai 2016).

In the News

India brought into effect the import ban on solar equipment, whereby the Government of India mandated the use of India-made photovoltaic cells and modules for all solar projects being undertaken within the country. Reports suggest that in retaliation to this move by the Indian government, the United States (US) has filed a claim with the World Trade Organization (WTO) against India, calling this move “discriminatory,” whereby it states that India's domestic rules have violated the trade rules of general agreement on trade and tariffs. With this claim, the US has effectively challenged India's usage of subsidies and the domestic buy rules of its solar programmes.

The Kerala solar scam simply adds to the dismal scenario. It revolves around a fraudulent solar power company that operated from Kerala. The accused company had reportedly disguised itself well enough to blend within the solar industry by awarding several well known persons with the “virgin earth golden feather environment award” to gain credibility.

Crores of rupees were reportedly swindled in this scam, which came at an added price of retarding the photovoltaic business in the state. Potential customers were found delaying their solar installations after this scam causing incalculable damage to the solar energy sector within the state. Malpractices and negligence in the marketing process, bad or poor quality components, and increased cost associations with solar panels, were identified as other factors considerably hindering the overall growth of the solar industry.

In Summary

Presently, whilst some parts of India are suffering from acute electricity shortage, the others are considerably affected by existing power shortage. What is needed now is substantial addition in terms of country's power capacity to fulfil the energy requirements of this rapidly growing economy. Harnessing the endemic solar energy can effectively assist in raising the country's energy security by branching out and expanding the supply, minimising the import dependence, and alleviating the volatile fuel prices. In addition to rural parts of India being benefited from electricity, solar power generation also helps in propelling economic

development of these underdeveloped rural areas. Apart from fuelling industrial development on the domestic front, the ultra-mega solar power project is expected to soon hold a major share of electricity in India, and also worldwide.

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Can Conditional Transfers Eradicate Child Marriage?

SAJEDA AMIN, NIAZ ASADULLAH, SARA HOSSAIN, ZAKI WAHHAJ

In recent years, governments, national and international donors and non-governmental organisations (NGOs) have increasingly focused attention on policies and initiatives that can effectively tackle the phenomenon of child marriage. These include: (i) schemes that transfer cash or other resources conditional on school attendance and/or marriage postponement (the Apni Beti Apna Dhan programme in India, the Zomba Cash Transfer programme in Malawi (Baird et al 2015) and the Female Secondary School Assistance programme in Bangladesh; (ii) programmes to develop the capacity and ability of adolescent girls to invest in their own future, by improving life skills and expanding opportunities for education and work (the Ishraq programme in Egypt, Tostan's Community Empowerment programme in Senegal, the Population Council's BALIKA programme in Bangladesh (Bandiera et al 2015), BRAC's Empowerment and Livelihood for Adolescents (ELA) scheme in Uganda and Tanzania¹ and the Adolescent Development programme in Bangladesh).

In addition, in most settings, there are efforts in place that attempt to change norms of marriage through legal bans and harsher penalties for under-age marriages. The highest rates of child marriage are typically found in low or lower middle-income countries where millions live below the poverty line. UNICEF's State of the World's Children 2016 report noted that "Girls from the poorest households—and those living in rural areas—face twice the risk of being married before turning 18 as girls from the richest households or those living in urban areas." A recent review of existing evidence suggests that cash-based interventions are effective for ending child marriage, as are multipronged programmes that do not include incentives related to marriage-timing. Which of these approaches is most effective in bringing

about the desired social outcomes, is an empirical question. This, ultimately, can only be addressed through careful analyses of implemented programmes. An understanding of the theory of change which implicitly underlies these approaches is just as important, as this can help highlight potential pitfalls, both in designing and evaluating programmes. We aim to contribute to this understanding by addressing a specific question. Do conditional cash transfers (CCTs) for delaying marriage have the same logic as the more widely investigated conditional transfer programmes for children's schooling? And do such transfers on their own enable adolescents to make decisions or exercise choices regarding marriage, beyond simply delaying the event?

By their very nature, conditional transfer programmes (with transfers in cash or kind) have to be tied to specific, observable and verifiable outcomes. In the case of educational programmes, these outcomes typically include school attendance, or performance in school, above a minimum threshold. The logic of these programmes is that they reduce parents' opportunity cost of sending their children to school. As long as the programme succeeds in making children turn up at school, the potential benefits are closely linked to school quality: teacher quality and time, classroom size, availability of textbooks, etc. In the case of conditional transfers tied to marriage postponement, their effectiveness depends much more on decisions made within the household, specifically, on how parents of adolescent girls respond to these incentives. The transfers depend on one verifiable outcome—at what age do their daughters marry?—while parents (or the household as a whole) are free to adjust the other parameters associated with that decision as they see fit. There is no guarantee that a household meeting the conditions set by the programme would result in improved agency of adolescent girls in their own marriage decisions—whether, when, and whom to marry—or increased investment in their education or earning skills, or a shift in beliefs and attitudes within the wider community, which could have a lasting impact on these outcomes.

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We can illustrate this last point using a hypothetical example. Imagine a household with an adolescent daughter eligible for a conditional transfer programme, who would ordinarily be married off before the age-of-marriage criterion set by the programme has been fulfilled. Given the programmatic incentives to delay marriage, parents may tweak the marriage process to satisfy this condition artificially—by lengthening the engagement period or entering into prolonged negotiations with the groom's family regarding the terms of the marriage.

A recent evaluation of Apni Beti Apna Dhan in Haryana—the oldest conditional transfer programme targeting early marriage—provides an illustration.² Eligible households had the opportunity to enrol in the programme within three months of the birth of a daughter. Upon enrolment, households received a savings bond which could be redeemed when the girl turned 18 (with an expected value of ₹25,000) provided she had not married by this date. The study found that programme beneficiaries were more likely to marry during their 18th year than non-beneficiaries, suggesting that parents were postponing the marriage of their daughters just long enough to receive the conditional transfer. More than half the respondents reported using the transfers to cover marriage expenses. By contrast, current evidence from programmes with a gender rights or education as focus, points to significant effects on marriage age (Bandiera et al 2015; Amin et al 2016).

There is considerable evidence available today showing that marriage postponement by adolescent girls in traditional societies has a positive (causal) effect on other social outcomes. This evidence is primarily based on an approach pioneered by Field and Ambrus (2008). They used the variation in the timing of onset of menarche among adolescent girls—which can shape social expectations about when a girl can and ought to marry in traditional societies—to investigate how early marriage affects female schooling. Subsequent studies have, broadly, confirmed these patterns and extended the findings to other social outcomes (Sekhri and Debnath 2014; Asadullah

and Wahhaj 2016). However, the causal effects obtained from these studies do not translate easily to the case of conditional transfers for marriage postponement. The reason being that these studies focus on the effects of marriage postponement resulting from a social constraint which forbids or discourages the marriage of girls before the onset of menarche. By contrast, CCTs operate by providing financial rewards for delaying marriage.

This reasoning does not imply that programmes providing conditional transfers for marriage postponement will necessarily be ineffective. Rather, they must be evaluated in terms of a wider set of outcomes, some of which may be difficult to measure. An outcome for which the problem of measurement is particularly acute is the agency of a young bride in her sexual relations following marriage. There is systematic evidence regarding young women's experience of non-consensual sex with an intimate partner (Jejeebhoy et al 2005), but household surveys rarely touch upon the issue because of its sensitive nature. Consequently, a fundamental outcome of relevance to adolescent girls and young women may be invisible in standard evaluation exercises. More generally, this example highlights that adolescent empowerment programmes—which aim to improve the agency of adolescent girls in their marriage decisions—may have intrinsic value beyond any material change in the timing of marriage they may bring about. This is because they enable girls to understand that they have the power to choose, and enable them to build the confidence and decision-making capacity to exercise that choice.

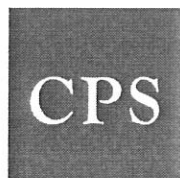
Impact on Social Norms

Another outcome, for which measurement is a concern, relates to the long-term impact of the programme on social norms and attitudes within the community. Some interventions involving adolescent girls explicitly target these outcomes. Conditional transfers for marriage postponement do not. Nevertheless, these shifts may be important to ensure that the programme's effects reach those not directly targeted; endure beyond the period of intervention; and carry over to future

generations (Wahhaj 2015). Therefore, they need to be factored in for a cost-benefit analysis of different types of interventions designed to tackle early marriage and improve outcomes for adolescent girls.

There is a broad consensus among practitioners that child marriage is an outcome of broad social norms and societal pressures. Financial poverty certainly adds to the pressures, leaving parents with the choice of trading-off the long-term welfare of their daughters for short-term relief from the burden of poverty. However, it is unclear whether removing economic pressures, per se, is sufficient to achieve the Sustainable Development Goals (SDG) of ending child marriage, along with early and forced marriage, by 2030. This is evidenced by the paradoxical experience of countries like India and Bangladesh where the prevalence of child marriage remains high despite decades of rapid macroeconomic growth and substantial decline in poverty.³

Given this uncertainty, policymakers should support a multidimensional, longer term and holistic view of the impact, which takes into account dimensions such as realised rights, health and access to education, rather than cost-benefit based approaches that rely on single-focus indicators that may or may not have a lasting impact on individual well-being. The former will have added pay-offs in terms of improving the well-being of women within marriage, including freedom from marital violence, irrespective of how the interventions affect the age at first marriage. Under their own constitutions, and as per international human rights law, all countries have committed to securing girls' rights to personal liberty, freedom of expression and freedom of movement. It is essential that the development agenda strengthen, rather than undermine this commitment.



PhD Entrance Test
PART - I

Duration: 60 minutes

Date: 11 May 2018

CPS Serial No.: _____

Department Reg. No.: RPS2018 _____

NOTE: Cut off in Part I score will be used for shortlisting of candidates for next stage: evaluation of Paper II

Q. No.	1-2	3-8	9-14	15-19	20-23	24-27	28-31	32-36	TOTAL
Marks									/40

I. For the following questions, select one of the given options and write your choice in the space provided (a, b, c, d, or e) [1 mark each]

1. A person stands at a point. She then walks 20 m towards east. Then she takes a right turn again and walks 10 m. Then she turns left and walks 10 m; and then turning right walks 20 m. She then turns right again and walks 60 m. Which direction from her starting point is she now facing?

- a) North
- b) North-west
- c) East
- d) North-east
- e) South-west

ANSWER _____

2. **Resool:** Pure research provides us with new technologies that contribute to saving lives. Even more worthwhile than this, however, is its role in expanding our knowledge and providing new, unexplored ideas.

Shalaka: Your priorities are mistaken. Saving lives is what counts most of all. Without pure research, medicine would not be as advanced as it is.

Resool and Shalaka disagree on whether pure research:

- a) derives its significance in part from its providing new technologies
- b) expands the boundaries of our knowledge of medicine
- c) should have the saving of human lives as an important goal
- d) has its most valuable achievements in medical applications
- e) has any value apart from its role in providing new technologies to save lives

ANSWER _____

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3. In social science and development studies research methods, PRA stands for
- a) Participant Rural Assessment
 - b) Practical Rural Assessment
 - c) Participatory Rural Appraisal
 - d) Practical Rural Answers
- ANSWER** _____
4. Which of the following theoretical / methodological perspectives argue that knowledge stems from one's social position
- a) Feminist Standpoint Theory
 - b) Grounded Theory
 - c) Functional Theory
 - d) Prospect Theory
- ANSWER** _____
5. Who has been awarded the Ramon Magsaysay award for his efforts and campaigns to eradicate manual scavenging?
- a) Bezawada Thomas
 - b) Ramachandra Gandhi
 - c) Anna Hazare
 - d) Bezawada Wilson
- ANSWER** _____
6. What was the place of the recent informal summit between President Xi Jinping and Prime Minister Narendra Modi?
- a) Ahmedabad
 - b) New Delhi
 - c) Wuhan
 - d) Beijing
- ANSWER** _____
7. UNFCCC stands for:
- a) United Nations Framework Convention on Climate Change
 - b) United Nations Framework Convention on Combating Carbon Emissions
 - c) United Nations Forum to Combat Climate Change
 - d) None of the Above
- ANSWER** _____
8. The first ever-elected Woman Head of State in the world was:
- a) Benazir Bhutto
 - b) Indira Gandhi
 - c) Khaleda Zia
 - d) Sirimavo Bandarnaike
- ANSWER** _____

PAGE TOTAL:

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9. The phrase 'sustainable development' was first used in:

- a. An Inconvenient Truth by Al Gore
- b. The Brundtland Report
- c. IPCC Second Assessment Report
- d. Silent Spring by Rachel Carson

ANSWER_____

10. Which of the following ministries has not been led by a woman minister in the central government since 2014?

- a. Human Resource Development
- b. Commerce and Industry
- c. Defence
- d. Environment, Forest and Climate Change
- e. Women and Child Development

ANSWER_____

11. Which of the following programmes attempts to provide micro-credit to poor and underprivileged women?

- a. Jawahar Rozgar Yojna
- b. Pradhanmantri Mahila Yojna
- c. Rashtriya Mahila Kosh
- d. Mahila Samridhi Yojna

ANSWER_____

12. Where is the headquarters of the New Development Bank located?

- a. Gurgaon
- b. Shanghai
- c. Mumbai
- d. Wuhan

ANSWER_____

13. What is the idea that 'Internet service providers should not block, manipulate or slow down data moving across their networks' known as?

- a. Net Neutrality
- b. Open Internet Protocol
- c. Integrated Services Digital Network
- d. Internet Control Message Protocol

ANSWER_____

14. Which company was recently in the news for having access to personal information on 87 million Facebook users?

- a. Facebook Analytics
- b. Oxford Analytica
- c. Harvard Analytics
- d. Cambridge Analytica

ANSWER_____

PAGE TOTAL:

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15. Who is the ex-officio Chairman of Rajya Sabha?

- a. President of India
- b. Vice President of India
- c. Prime Minister of India
- d. Leader of the Opposition

ANSWER_____

16. When sociologists study the structure of layers in society and people's movement between them, they call this:

- a. Social stratification
- b. Social control
- c. Social conflict
- d. Social solidarity

ANSWER_____

17. In economics, what does laissez-faire mean?

- a. People should be left alone to do whatever they want
- b. Life should be made as fair as possible
- c. The state should exercise detailed control over the economy
- d. The state should not interfere in the detailed operations of the economy

ANSWER_____

18. The Bretton Woods agreement...

- a. led to a campaign to save the rainforest
- b. led to the establishment of the International Monetary Fund (IMF)
- c. was a deal between developed nations to keep the Third World in poverty
- d. led to the establishment of the World Wildlife Fund (WWF)

ANSWER_____

19. Which is the body that regulates and directs implementation of the GST Act?

- a) Reserve Bank Of India
- b) GST Authority
- c) Ministry of Finance
- d) GST Council

ANSWER_____

PAGE TOTAL:

20. "The bouncer's countenance discouraged brawls". Countenance means

- a) Message
- b) Presence
- c) Expression
- d) Strength

ANSWER _____

21. Four different electronic devices make a beep after every 30 minutes, one hour, 1 ½ hours and 1 hour and 45 minutes respectively. All the devices beeped together at 12 noon. They will beep again together at:

- a) 12:00 midnight
- b) 9:00 am
- c) 3:00 am
- d) 6:00 am

ANSWER _____

22. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and C in 198 seconds, all starting at the same point. After what time will they meet again at the starting point?

- a) 26 minutes 18 seconds
- b) 42 minutes 36 second
- c) 45 minutes
- d) 46 minutes 12 seconds

ANSWER _____

23. Fill in the blank:

"It was her view that the country's problems had been _____ by foreign technocrats; to invite them to come back would therefore be counterproductive."

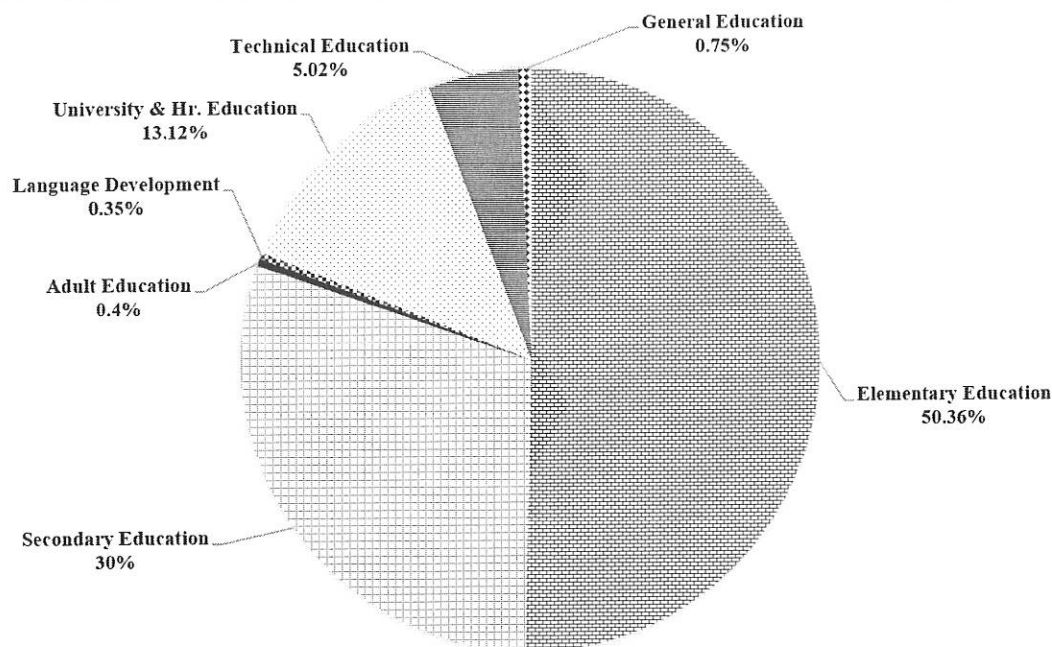
- a) Exacerbated
- b) Foreseen
- c) Attacked
- d) Ascertained
- e) Analysed

ANSWER _____

PAGE TOTAL:

II. Study the following pie chart and answer the questions that follow [2x4=8 Marks]

SECTOR-WISE EXPENDITURE ON EDUCATION (CENTRE + STATES) 2012-13



24. Approximately how many degrees should be there in the central angle of the sector for university and Higher Education?

ANSWER _____

25. If the expenditure on Secondary education in 2012-13 was 97,000 crores; what is the expenditure on General Education?

ANSWER _____

26. What is the amount spent on adult education?

ANSWER _____

27. What is the approximate ratio of expenditure between University & Higher education and Technical Education?

ANSWER _____

PAGE TOTAL:

III. Study the table below and answer the questions that follow

[4 Marks]

Employment in Organised and Unorganised Sectors in India, 1961–2004

Years	Organised Sector	Organised Sector (%)	Unorganised Sector	Unorganised Sector (%)	Total (million)
1961	14.60	7.8	174.10	92.2	188.70
1971	20.20	8.9	206.70	91.1	226.90
1981	22.90	9.7	214.00	90.3	236.90
1991	26.70	9.4	259.38	90.6	286.08
2001–04	28.11	7.08	368.89	92.9	397.00

28. In the year 1971 how many individuals were employed in any sector?

ANSWER _____

29. What is the change in percentage of individuals employed in organized sector from 1981 to 1991?

ANSWER _____

30. Which year the rate of growth of employment in the organized sector was the highest as compared to the previous reported year?

ANSWER _____

31. What happens to the share of the two sectors in the period from 1991 to early 2000s?

ANSWER _____

PAGE TOTAL:

IV. Answer the following questions with reference to Passage 1 *[Attached separately]*
[5 Marks]

32. According to this passage what is the main aim of gentrification?

- a) Beautifying the city
- b) Conserving heritage sites
- c) Allowing for capital inflow in urban spaces.
- d) Creating dynamic living and work spaces

ANSWER _____

33. The author intends to demonstrate that:

- a) Gentrification is harmful for a city's image
- b) Gentrification disrupts life in the city
- c) Gentrification can help cities grow
- d) Gentrification creates dangers for most inhabitants of an urban space

ANSWER _____

34. What kind of risk is being foreshadowed in this passage?

- a) Old infrastructure is being cannibalized to serve a new purpose without proper planning
- b) Previous residents are being displaced causing unrest and anger in them
- c) The gentrified areas lack security due to their close proximity to congested urban slums
- d) The new infrastructure does not adequately serve the needs of the neighbourhood residents.

ANSWER _____

35. What does the author mean by the project of 'civilizing the city'?

- a) Allowing for greater civil society participation in the city
- b) Modernizing and upgrading a city
- c) Making the city a better place to live for its citizens
- d) Creating greater respect and recognition for the civilizations that have contributed to the city

ANSWER _____

36. What word is closest to the meaning of the word 'palimpsest' as used in the last sentence?

- a) Medley
- b) Intertwined
- c) Superimposition
- d) Heterogeneous

ANSWER _____

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PhD Entrance Test

PART I

Duration: 60 minutes

Date: 11 May 2018

PASSAGE 1

Gentrification in Mumbai

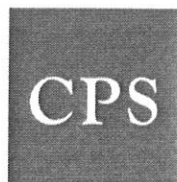
Gentrification creates new spaces of capital accumulation that are directly linked to bourgeois modes of consumption disguised by ideologies of heritage, conservation, and elite placemaking.

Gentrification literature has extensively documented the negative effects and risks of the process for the displaced. We argue that the effects themselves must be situated and studied against a broader landscape. Rather than focus solely on the displaced classes, it is important that in the context of a risk society, we identify and expose the risks of gentrification for the gentrifying class as well, and for the urban population as a whole.

In Mumbai, displacement is not necessarily a defining feature of gentrification, at least not in the conventional sense. Hence, the research question should address risks and negative effects for both the gentrifier and the gentrified, as well as for urban populations in other parts of the city who may be affected by the process indirectly. While gentrification may be promoted by ideologies sympathetic to “civilising the city,” even as they are a part of a larger “revanchist urbanism” project we argue that the bourgeois consumerist culture of the urban middle class, in fact, determines the path of gentrification in ways that lead towards “uncivilised” forms of urban neighbourhood transformation.

Mumbai was once the city of 58 textile mills. The process of deindustrialisation led to the gradual and eventual closure of the mills from the mid-1980s onwards, giving scope for a new landscape to emerge in the mill district. Service sector firms, information technology industries, media and advertising, finance, and the creative sector occupied the mill compounds and factory buildings, emerging as the fulcrum of new growth in these localities. Shopping malls, restaurants, pubs, night clubs, art galleries, high-end furniture stores, designer shops, and other entertainment hotspots stood cheek by jowl and became the main mantra of the city branding process. Simultaneously, the area also witnessed the growth of several gated residential complexes, as real estate players moved in to construct luxury housing in the newly available spaces close to the city’s old and new central business districts and elite residential areas.

The existing mill structures began to be converted without being completely demolished and rebuilt. Art galleries, loft-based stores in warehouses, fashion houses, and media companies have sprouted in the erstwhile mill compounds, leading to exorbitant land values and making for an altered landscape of contrast and contestation. These transformations occurred, even as the erstwhile mill workers continued to live in chawls in the same areas, now unemployed or in conditions of precarious employment. The interiors of the old mill structures and mill lands in their new avatar have become a palimpsest where vistas of the old negotiate with the new architecture and culture, resulting in a spatial as well as symbolic transformation.



**PhD Entrance Test
PART II**

Duration: 60 minutes

Date: 11 May 2018

CPS Serial No: _____

Dept. Reg. No: RPS2018 _____

NOTE: Cut off of Part II score will be used for shortlisting of candidates for the next stage: interview

Q. No.	1	2	3 or 4	TOTAL
Marks				/45

1. Basing your answer on a policy related problem in India, answer the following set of questions:

a) Explain the problem briefly (approximately 150 words)

[5 Marks]

b) What do you perceive to be the issues in implementation of the existing on-ground policies that address the issue explained in (a) above? (150 words) *[5 Marks]*

c) What are your recommendations for improving the existing policy measures? (150 words) *[5 Marks]*

2. Read Passage A (Provided separately) and answer the following questions:

a) What has been the main findings from analyses of data on Indian health sector that this passage opens its argument with? [1 Mark]

b) What does the NHP 2017 data show about consumer preference for accessing health care? What according to you are two possible reasons that explain this trend? [1 + 2 Marks]

Are they given?

c) Outline the government's reaction to malpractice cases as reported in this passage. State your reasons for agreeing or disagreeing with the author's evaluation of such measures.

[1+2 Marks]



d) Define OOP in your own words and give relevant figures relating to OOP from the passage. [2 Marks]

e) What is the doctor patient ratio according to NHP 2017? Suggest Policy measures that may alter / improve this ratio? [1+2 marks] ←

f) Apart from an increase in public spending on health care, what policy measures, according to you, will be needed to deal with the issue presented in the passage? [3 marks] |

ANSWER EITHER Q3 or Q4 *[15 Marks]*

3. Read Passage B1 (Provided separately) and answer the following questions:

- a) What according to the author makes “e-commerce” a “misnomer” for the issue presented in the passage? *[1 Mark]*
- b) How does the passage differentiate between digital data and digital intelligence? *[2 marks]*
- c) Explain what is meant by “AI as a new factor of production, along with capital and labour”? *[2 Marks]*
- d) What does the author think will happen if policies allow for an unhindered global flow of digital intelligence? *[3 Marks]*

e) What, according to the passage, are the current advantages that India has with respect to the world digital trade? Are there any others that you can suggest? [1 + 2 Marks]

f) What kind of policy goals can India adopt to ensure and advance the advantages India has in the realm of digital commerce [2 Marks]

g) Globalization is often described as an international agreement to the free flow of labour and capital to increase efficiencies and reap maximum benefits from these resources. In that context, how would you evaluate the position that the author is urging Indian policy makers to adopt for the flow of digital intelligence? [2 Marks]

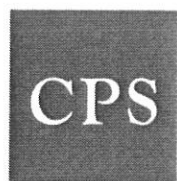
4. Read Passage B2 (Provided separately) and answer the following questions:

- a) “It wouldn’t be an exaggeration to say that air pollution is one of the biggest public concerns in India today.” Do you agree with this claim, state your reasons. [2 Marks]
- b) What causes are identified by the passage to account for the increase in carbon emissions in India in recent times? [1 Mark]
- c) What is meant by a revenue neutral policy? How will remodelling India’s energy mix achieve revenue neutrality? [1+ 3 Marks]

d) Taxes can be imagined to be disincentives which try to alter behaviour. But negative disincentives work less well than positive incentives. How does the passage propose to turn a disincentive to an incentive in regards to the carbon tax? *[3 Marks]*

e) What does the passage mean by describing carbon tax as “regressive in nature”? *[2 Marks]*

f) Apart from changing the fuel use behaviour, what is one positive externality of the policy change predicted in the passage? *[3 Marks]*



PhD Entrance Test PART II

PASSAGE A

Predatory Private Providers

The government must heed data that healthcare expenditure is impoverishing the poor further.

The two recent incidents wherein two hospitals belonging to well-known chains charged ₹16 lakh for a 22-day dengue treatment and ₹15.6 lakh for a 15-day dengue treatment respectively simply reaffirm India's dismal health service situation. Between a public health service on the brink of collapse and a private sector that is growing aggressively, a majority of Indians face financial disaster in the case of hospitalisation. The recently released National Health Profile (NHP) 2017 reaffirms what myriad sources of international and national data on India's health sector have been finding for decades. It shows that the government's spending on public health is not increasing in real terms, the private health sector is growing aggressively, and the out-of-pocket (OOP) expenditure on medical services is continuing to impoverish the poor, especially in rural India. OOP refers to the amount that is paid to the service provider without any subsidy from the government or third party insurance. Incidentally, both patients in the two incidents mentioned above, died.

The resource crunch in public health services leads even the very poor to prefer private hospitals. According to the NHP 2017, despite the costs being higher by two to nine times in private hospitals as compared to the public ones, 61% rural and 69% city patients preferred the private ones. Also, one in five urban families and a quarter of all rural households are forced to borrow or sell assets for a hospital stay. Of the country's total health expenditure, OOP constitutes 63%. This has been calculated according to the National Health Account that shows per capita expenditure of the total health expenditure works out to ₹3,826 per person of which ₹2,394 is spent by patients from their own pockets.

Despite this, an unheeding government continues to unburden itself of responsibilities in favour of the private sector. The latter functions without accountability and a strict regulatory mechanism and the ill effects of this are beginning to show. In another recent case, the Delhi government cancelled the licence of a unit of a large chain of hospitals when a premature baby was wrongly declared dead. On discovering the mistake, the baby was rushed for treatment but succumbed after a week-long struggle. The cancellation was a thoughtless reaction leading to massive inconvenience to the hospital's other patients, including the severely ill and clearly smacks of populism.

Had the union and state governments insisted on the Clinical Establishments (Registration and Regulation) Act, 2010 being implemented, many of the malpractices, financial and otherwise, by private hospitals could have been addressed. This act, which provides punitive measures against unethical practices, is presently adopted (some states have their own versions of it) by 10 states and six union territories. However, it remains on paper in many of these states. As can be seen from the centre's imposition of a price cap on coronary stents, private hospitals have mastered the art of finding loopholes. Patients undergoing -angioplasties have complained that costs have remained the same despite the cap.

Karnataka's example is perhaps illustrative of the power of the private hospital sector. The state government was forced to dilute the punitive provisions of the Karnataka Private Medical Establishments (Amendment) Bill(KPME) 2017 after doctors and private hospital owners protested. The bill, which was passed by the state assembly in November, had sought to deal with medical negligence and other irregularities that affect patient care. As health activists have pointed out, the state government was unable to stand up to the protests of the hospital owners and the strike called by doctors therein, because the public health services are weak and public suffering and anger was growing. As the NHP 2017 figures show, Karnataka spends just 0.7% of its gross state domestic product on healthcare. The national average is 1.1%.

The NHP 2017 has also pointed out that India has only a little over one million allopathic doctors to cover a population of 1.3 billion. Of the one million, approximately 10% work in the public health sector. The numerical strength of nurses and health workers is also inadequate. The report also reveals regional disparities in the quality of and access to health services. Add to this a medical education system that does not sensitise students to the needs of a poor country, the rural-urban disparity in access to health services and the growing burden of non-communicable diseases among the poor across the country.

The NHP 2017 has proposed an increase in public spending on healthcare from 1% to 2.5% of the gross domestic product (GDP) by 2020, which is below the world average of 5.99%. The stated objective of the NHP 2017 is to provide credible data to help in policy formulation. There is enough and more data to show that the government needs to act urgently. What is needed is political will to ensure that poor patients and their families are not at the mercy of greedy private health providers.

PhD Entrance Test PART II

PASSAGE B1

Digital Trade Games

India must not succumb to global digital trade paradigms and rules that back predatory business

Negotiators for the proposed Regional Comprehensive Economic Partnership (RCEP) treaty between ASEAN countries, China, India, Japan, South Korea, Australia and New Zealand are currently meeting in Hyderabad. E-commerce will be a key focus.

A misnomer

While there are many contentious issues involved in the RCEP, countries at least know what they are negotiating about and their likely implications. However, it is not the case with e-commerce issues. In fact, e-commerce is a misnomer here. What is under discussion is placing great limitations on digital policymaking by any country in the name of promoting e-commerce. Few understand the real nature of the digital issues involved and the relevant policy requirements of the present and the future. In these circumstances, a blank cheque could possibly be made out to global digital corporations and the countries backing them.

Let's consider the issue of the free global flow of data — something wrongly presented as being the same as the free flow of information. While data that underpins global media, or personal/social communication networks is one thing, data that today is increasingly basic to banking, retailing, the defence forces, public services, health and education services and so on is an entirely different matter.

There is no one thing called “data” that countries could agree to let flow freely across borders. What we have instead are digitalised versions of banking, retail, public services, health services and so on. If something can be meaningfully negotiated at global trade talks, it is such digital services — each of which has different dynamics and implications and needs different treatment. But it may be too early to understand the real nature of these emergent digitalised services — which will eventually be their mainstream form. It was just yesterday that the technology wave of artificial intelligence (AI) — that may economically be even more transformational than the Internet as we know it — struck us.

Free flow of intelligence

Therefore, there is no single thing as “data” or its global flows to negotiate about. Instead, there are different kinds of digital services. Further, almost all such services are in their infancy whereby there is scant understanding about them. It is hardly an appropriate time for countries to make trade bargains and policy curtailment promises around them.

Instead of seeing it as a global flow of data — a phrase with a deliberate and positive ring about it — one must see it as a global flow of intelligence. The raw resource of data is useful only when turned into digital intelligence. Let's then try to understand what is meant by an unhindered global flow of digital intelligence.

First, digital intelligence is going to be by far the single most important economic resource. Whoever has it controls everything. Accenture recently named AI as a new factor of production, along with capital and labour.

Second, digital intelligence tends to concentrate strongly around a few poles or centres. That is the very nature of intelligence, where two and two is more than twenty-two.

This results in every sector getting organised around a very few centres of sectoral digital intelligence. Uber has worldwide intelligence about urban transport; Monsanto is working on a global agriculture networking and intelligence platform; for General Electric, it's "the operating system for industrial Internet"; Baidu, the Chinese Google, is developing the "android of transportation" in partnership with Ford, Daimler, Microsoft and others. In short, global consolidation is taking place in every sector.

A prominent Chinese businessman recently observed that countries "will be forced to negotiate with whichever country supplies most of their A.I. software — China or the United States — to essentially become that country's economic dependent, taking in welfare subsidies in exchange for letting the "parent" nation's A.I. companies continue to profit from the dependent country's users. Such economic arrangements would reshape today's geopolitical alliances."

Digital industrialization

India is still stuck in the IT realities of yesterday. It remains in denial about the major transformations in the sector that are taking place along with unprecedented job losses. No doubt there is still a lot of software code to be written and IT to be pulled together, and India retains some key advantages in core IT areas. But the issues of e-commerce or digital trade are much larger. We face a very new reality today as we stand on the threshold of a digital society, where every major economic and social activity will be underpinned by digital intelligence.

The main questions for India to consider are these. How much digital intelligence is flowing into India and how much outwards? Is this trend going to change any time soon? Are there strategies in place to change this trend?

India must consider a digital industrialisation strategy that ensures that the immense value arising from digitally-induced efficiencies in every sector is retained within India and not allowed to flow out uninhibitedly. If it allows such outflows, it will soon find itself on the wrong side of digital colonisation. It must put its digital house in order before thinking of getting a part of the global digital pie, as China did. Domestic digital strengths should first be developed on the back of its big domestic market. This requires an independent digital policy, including protections for India's incipient digital industry. This will not only ensure that our economy and society are not controlled from outside but also protect existing jobs and create many more new ones.

India has just begun some good policy work for a data economy and society, with its "Digital India" policies, and development of "digital public goods" like the IndiaStack of basic digital platforms and infrastructural data systems that are open to all. These can be very helpful in developing a local digital industry. However, such efforts can get nullified if India succumbs to global digital trade paradigms and rules developed by countries that back predatory global digital business, by accepting the "free global flow of data" and sacrificing its digital policymaking powers and sovereignty.

PhD Entrance Test PART II

PASSAGE B2

For Clean Air, India Needs a Policy Leap

The way to curb pollution is to tax carbon. Only then will households look for greener substitutes

It wouldn't be an exaggeration to say that air pollution is one of the biggest public concerns in India today. Its implications are many but just two will suffice here. A report of the Lancet Commission on pollution and health states that around 19 lakh people die prematurely every year from diseases caused by outdoor and indoor air pollution. A study by the Indian Journal of Pediatrics shows that the lungs of children who grow up in polluted environments like Delhi are 10% smaller compared to the lungs of children who grow up in the U.S. This is nothing short of a public health emergency. What is needed, therefore, is a comprehensive policy to curb pollution. We need to act now.

At the heart of the problem of pollution are carbon dioxide (CO₂) emissions. About 75% of all greenhouse gas emissions are CO₂ emissions produced through burning fossil fuels — oil, coal and natural gas — to generate energy. Since the early 2000s, carbon emissions have increased because of high growth in the Indian economy. In 2014, India's total carbon emissions were more than three times the levels in 1990, as per World Bank data. This is because of India's heavy dependence on fossil fuels and a dramatically low level of energy efficiency.

Remodel the energy mix

Emissions can be curbed only if people are persuaded to move away from fossil fuels and adopt greener forms of energy. But how do we achieve that? Tax carbon, period.

A part of the carbon revenue thus generated can be used for a systemic overhaul of the energy mix, which, to a large extent, would address the pressing problem of environmental degradation. The Indian economy's energy mix needs to be remodelled through investments in clean renewable sources of energy like solar, wind, hydro, geothermal and low-emissions bioenergy, and by raising the level of energy efficiency through investments in building retrofits, grid upgrades, and industrial efficiency. According to our estimates, this energy mix overhaul requires an additional 1.5% of GDP (to the current annual level of 0.6%) annually over the next two decades. Assuming that the Indian economy grows at 6% per annum and the population is likely to rise from 1.3 billion to 1.5 billion over the next two decades, the per capita emissions will still fall as a result of this policy, from the International Energy Agency's 2035 Current Policy Scenario of 3.1 metric tonnes

to 1.5 metric tonnes — a 52% decline. Since this expenditure is financed by the carbon tax revenue, it will be a revenue-neutral policy with no implications on the fiscal deficit.

There is, however, a problem with carbon tax. It's regressive in nature — it affects the poor more than the rich. Fortunately, there's a way out. Economists in the West have argued for a 'tax and dividend' policy according to which the revenue thus generated is distributed equally across its citizens and as a result, the poor are more than compensated for the loss, since in absolute amounts the rich pay more carbon tax than the poor. Such a policy of cash transfer, which might work in the West, however, has a problem in the Indian context, which has been discussed in the context of the Right to Food debate.

Instead of a cash transfer, the other part of the carbon revenue can be used for an in-kind transfer of free electricity to the population that contributes less carbon than the economy average, and universal travel passes to compensate for the rise in transport costs and to encourage the use of green public transport. Such a policy justly addresses the widening schism between Bharat, which bears the climate impact burden, and India, which is imposing that burden because of its lifestyle choices.

As of 2014, more than 20% of India's population did not have access to electricity. In July 2012, India experienced a blackout affecting roughly 70 crore people. Through this Right to Energy programme, every household in India will have access to electricity, a feat that almost all the governments since Independence have dreamt of but have failed to deliver. The free entitlement of fuel and electricity for a household works out to 189 kWh per month based on our calculations from the National Sample Survey data. Anything above this limit will be charged in full to control misuse of this policy. Travel passes with a pre-loaded balance amount of around ₹4,600 per household per annum, which can be used in any mode of public transport — private and government alike — will be available for every household.

The level of carbon tax required for this policy to come into effect is ₹2,818 per metric tonne of CO₂. It will be levied upstream, namely, at ports, mine-heads, and so on. While the prices of almost all the commodities will rise, the highest rise in price will be in fuel and energy since the carbon content is the highest in this category. To give an idea about the pinch that will be felt, the average price of electricity will rise from its current value of ₹3.73 to ₹4.67 per kWh.

Other benefits

This policy not only curbs emissions but also delivers on providing more employment since the employment elasticity in greener forms of energy is higher than those in fossil fuel-based energy. Higher prices of commodities according to their carbon content will induce households, including the rich, to look for greener substitutes. They have the effect of enticing even the poor to move away from traditional forms of energy consumption because the price of energy will be zero for them (provided they consume less than the cut-off limit) as compared to a shadow positive price in terms of the time used for collection of wood or cow dung cakes. Availability of free energy also addresses the issue of stealing of electricity, since there will be no incentive left for those who steal. In India, even in 2014, the value of electricity stolen through corrupt means amounts to about 0.8% of GDP. It's difficult to put a figure on the health benefits that such a policy will entail, but as a rough measure, a significant part of more than 3% of India's GDP currently spent on pollution-induced diseases will surely come down.

If we want to breathe to live, India needs to make such a policy leap.

CENTRE FOR POLICY STUDIES, IIT BOMBAY

PhD Entrance Test Paper

Part – 2: Comprehension, Essay Writing and Research Proposal

Venue: LC001 Time: 9:30-12 Date: 11th May, 2019 Total Duration: 2.5 hours

CPS Serial No.:

Dept. Reg No.: RPS2019_____

Q. No.	Part 1 (45)	Part 2A (20)	Part 2B (15)	Part 2C (20)	Total (100)	
Marks						

Please Use Part 2 Of MCQ Answer Sheet, Separately Provided,
For Answering Q. 1 To 14 Of Q. 2A.

Please Use A Separate Answer Sheet, For Answering Both Q. 2B & 2C.

Please write your CPS Serial No. and Dept. Reg. No.
On All Answer Sheets.

Section: 2A - Comprehension [Q. 1 to 14 - one mark each, Q. 15 & 16 - three marks each] - Total 20 marks

For Q.1 through Q. 16, read the following two passages and answer the given questions based on it. Some words/phrases are printed in bold to help you locate them while answering some of the questions.

Passage I:

Urbanisation is a positive phenomenon provided the cities are able to harness its potential. A recently public published UN-Habitat global report on human settlements shows that not many cities in developing countries such as India have managed to do this. Indian cities struggle to manage the **swelling** numbers. They tend to have inadequate infrastructure poor mobility and a lack of affordable housing. The challenge they face is two fold; efforts to distribute growth across urban centres have been inadequate and the urban planning practices are outdated.

Much attention is paid to mega cities, leaving the smaller cities largely unattended. Of the 5161, urban centres, as the eleventh five year plan points out, only 1500 have some form of plan to manage their growth. With quality of life suffering in the smaller cities, more people tend to move to the metros, burdening them further. Although, the need for developing small and medium-size towns was highlighted as early as 1988, by the first National Commission on Urbanisation, not much has happened on that front. As for the bigger cities, the additional attention and the presence of a master plan have not necessarily meant improvement, Managing a city through a single unified master plan has failed to **deliver**. The reason for this, aside from poor implementation, is that the plans are conceptually flawed.

Indian cities are complex composites. Alongside the formal city exists a large and an equally important informal city inhabited by the poor. Even the formal city is composed of many parts such as the historical core. The colonial enclave and new areas of post-independence growth. Notwithstanding these differences, the master plan tends to paint the city with a single brush, favouring the new formal areas and ignoring the informal. This has fragmented cities further and skewed development in favour of new areas. The recommendations in the UN-Habitat report do offer a way forward. The suggestion to implement the strategic spatial planning system should be immediately adopted. Unlike the master plan, such innovations recognise the intra-city difference better and help focus on priority aspects or areas. They should help eventually to **mitigate** spatial inequalities, integrate infrastructure and evolve compact city forms that will optimise travelling within the city. Simultaneously, the institutional framework for planning should be strengthened with an emphasis on people's participation and regional networking. Earnest implementation and regular monitoring of the plans are equally **vital** for reaping the benefits of planning.

1. It is implied in the passage that
 - A. Cities in India have not been able to reap the real benefits of urbanisation due to lack of proper planning.
 - B. Urbanisation is not a desirable phenomenon
 - C. Urbanisation offers the solution for all the problems that smaller cities face
 - D. None of the above

2. What, according to the author, are the main components of a 'formal city'?
 - A. The historical core, the colonial enclave and the newly developed areas.
 - B. Pre-independence and post-independence areas.
 - C. New city and old city
 - D. Planned city and the unplanned city

3. Which one or more of the following factor(s) is/are recommended by the UN-Habitat report as essential for planned urbanisation and growth?
 - I. The master plan proposed by the first, National Commission on urbanisation.
 - II. The strategic spatial planning system.
 - III. A strong institutional framework for planning encouraging people's participation.

Select the correct answer using the codes given below

- A. Only I
 - B. II and III
 - C. I and III
 - D. All 3 - I, II & III
-
4. The caption that aptly sums up the contents of this passage is:
 - A. challenges of urbanisation-the strategic way forward
 - B. the phenomenon of urbanisation-boon or bane
 - C. urbanisation - a monster out of control
 - D. None of the above

 5. Why has the Master Plan to manage a city failed?
 - I. The officers concerned did not respond to the government's directive.
 - II. The plans were not acted upon in a proper manner.
 - III. The plans had errors in them.
 - A. Only I
 - B. II and III
 - C. I and III
 - D. All - I, II & III

Choose the word that is most SIMILAR in meaning (words are from passage above):

6. Harness
 - A. To fasten
 - B. To plough
 - C. To control
 - D. To utilize
 - E. To withdraw
7. Swelling
 - A. Increasing
 - B. Getting worse
 - C. Uncontrollable
 - D. Decreasing
 - E. Moving
8. Mitigate
 - A. To lessen
 - B. To excuse
 - C. To weaken
 - D. To dilute
 - E. To tranquilise

Choose the word that is OPPOSITE in meaning (words are from passage above):

9. Deliver
 - A. to capture
 - B. to outperform
 - C. to fail
 - D. to retain
 - E. to hold
10. Vital
 - A. Dull
 - B. Sluggish
 - C. Unimportant
 - D. Additional
 - E. Extra

Passage II: Monitoring Digital Election Campaigns

The ECI's approach to campaigning on social media has failed to ensure a level playing field.

The campaigning for the upcoming Lok Sabha elections has been perhaps the most “digital” so far with parties across the spectrum now using, and often abusing, the digital tools available to them such as social media, mobile apps, online discussion forums, and mass messaging.

Last week, social media platforms came together with the Internet and Mobile Association of India to release a “Voluntary Code of Ethics” in consultation with the Election Commission of India (ECI). Through this, Facebook, Google, Twitter and others will monitor and take action against election-related paid advertisements that violate the ECI guidelines. This code claims to ensure that there is no misuse of the platforms that can “vitate the free and fair character” of the electoral process.

Over the last decade, social media has developed from being a networking tool to becoming an important mode for citizen engagement that can empower, educate, and emancipate, changing the way in which democracies operate. However, as was evident from the Cambridge Analytica revelations, the personal data of millions of people was harvested using these very same tools for political gains. Closer home, along with threats of data harvesting, fake news is rampant and content websites are masquerading as “news outlets.” These instances reveal that while social media platforms can be empowering, they are still unequal forums with differential access determined by money and power.

At an all-party meeting called by the ECI in August 2018, there was discussion on instituting a cap on election-related expenses by political parties in order to bring parity in spending by national and regional parties and limit how money can impact election outcomes. Much of social media spending takes place through influencer marketing, where prominent individuals who are aligned with political parties run long and expensive campaigns. A majority of such campaigns are run on cash payments and it is difficult to establish a money trail. It is also almost impossible to track individuals posting advertisements on behalf of political parties. Platforms such as WhatsApp, which offer encrypted messaging, are also used to promote political advertisements, further complicating the process of monitoring.

In this context, it is necessary to question the role of the ECI. While the ECI has recognised the use of social media in election campaigning as early as October 2013—before the 2014 Lok Sabha elections—in its “Instructions of the Commission with respect to use of Social Media in Election Campaigning,” it had only aimed these instructions at “candidates, political parties, media and election observers.” We have come a full circle, with several state assembly elections having been held since then, and there seems to have been no updation of these instructions. There have been no

further guidelines on how social media platforms need to be used by candidates, parties, and others, nor has a cap been put on the inordinate sums of money being used by parties to advertise on these platforms.

The recently released voluntary code of ethics is a case of too little, too late, and is only a guide on how social media companies and the ECI are to interact in monitoring paid advertisements during electoral campaigning. Being platforms that carry advertisements, these social media companies should essentially be bound by the model code of conduct with respect to paid advertisements from candidates, political parties, and their supporters. The 2013 instructions from the ECI had already directed that advertisements on social media require pre-certification and transparency on payments made for the same. That steps to comply with these instructions are being taken only now, and that too on a voluntary basis, shows the ECI's lethargic and outdated approach towards digital platforms and their role in electoral processes. As a result, the ECI has failed to ensure a level playing field in the electoral process, online and offline.

The digital sphere is not separate from physical, social and political spheres, and to view it as operating in isolation is rather unwise. We are in a grey zone now because we have ignored the need to interrogate how digital platforms and technologies affect democratic systems, and in turn the integrity of electoral processes. Setting up a "voluntary" code of ethics one month before the world's largest elections are to begin is nothing more than a futile public relations exercise by the social media platforms. Ideally, the ECI should have been creating an adequate and nuanced knowledge base on social media in the last few years, which would have enabled it to navigate the fast-evolving digital landscape. If it wants to catch up with what social media and elections might look like in 2024, the time for the ECI to take action is now.

11. Why does the given passage claim that social media platforms can be seen as unequal forums? [1 mark]
- A. Because any ruling party has a better chance of winning elections using social media tools
 - B. Because social media has developed into an important mode for citizen engagement that can empower, educate, and emancipate
 - C. Because the personal data of millions of people was harvested using social media tools for political gains
 - D. Because the digital sphere is not separate from physical, social and political spheres, and to view it as operating in isolation is rather unwise

12. Why, according to the passage, is it very difficult to monitor political advertising on social media? [1 mark]
- A. Because companies such as Facebook, Google, and Twitter do not comply with Indian government rules
 - B. Because tracking individuals posting advertisements, especially on encrypted services is next to impossible
 - C. Because the code of ethics instituted by the ECI is voluntary and not binding on political parties
 - D. Because the personal data of millions of people has already been harvested and it is now too late to do anything concrete
13. How, according to the passage, do political parties abuse digital tools such as social media, apps, discussion forums, and mass messaging? [1 mark]
- A. By posting invective and fake news during election times to unduly influence voters
 - B. By sending out election-related paid advertisements to voters during election times
 - C. Both (a) and (b)
 - D. None of the above
14. What does the word 'vitiate' mean? [1 mark]
- A. Spoil the quality or efficiency
 - B. Increase the severity
 - C. Neglect important issues
 - D. Run on cash payments

15. According to the passage, how has the ECI failed to ensure a level playing field in the electoral process, online and offline? Explain in not more than 50 words. [Use the space provided below. Give word count] [3 marks]

16. According to the passage, what should the ECI do to ensure that democracy is not subverted by technological systems? Explain in not more than 50 words. [Use answer sheet provided. Give word count] [3 marks]

Section: 2B - Research Proposal [4 questions] - Use a separate answer sheet provided to you. - 15 marks total

Present your research proposal covering the following points.

1. Provide a Brief background and Rationale for your intended Policy Research (5)
 2. What is/are the Research Question(s) and Research Objectives (3)
 3. Provide the Methodological details including Data Sources and Methods for Data Collection and Analysis (5)
 4. What are the expected Outcomes of your research? (2)
-

Section: 2C - Essay Question [4 steps] - Use a separate answer sheet provided to you. - 20 marks total

Step 1: Choose **one sector** (such as water, energy, electricity, telecommunications, agriculture, specific industry, education, health, information economy, among others) OR **one issue** (such as MNREGA, Food Security, Primary Education).

Step 2: List and very briefly (5-6 lines) state **3 major policy challenges/problems** in the chosen sector or issue (Marks 6)

Step 3: Explain briefly one set of '**policy measures**' deployed to address one of the three policy challenges/problems mentioned in Step 2 above. (Marks 6)

Step 4: Present your '**assessment of the policy measure**' explained in Step 3, in terms of their strengths, weaknesses and their performance on the ground (Marks 8)

CENTRE FOR POLICY STUDIES, IIT BOMBAY

PhD Entrance Test Paper

Part – 1: Policy General Knowledge, English and Data Analysis

Venue: LC001 Time: 9:30-12 Date: 11th May, 2019 Total Duration: 2.5 hours

CPS Serial No.:

Dept. Reg No.: RPS2019_____

Q. No.	Part 1 (45)	Part 2A (20)	Part 2B (15)	Part 2C (20)	Total (100)	
Marks						

**Please Use Part 1 Of MCQ Answer Sheet,
Separately Provided, For Answering All MCQ Questions.**

**Please Make Sure You Write Your CPS Serial No.
And Dept. Reg. No. On All MCQ Answer Sheets As Well.**

Section: 1A – Policy General Knowledge [20 questions – 1 mark each]

1. India is supposed to be facing the problem of twin deficits. Twin deficits are:
 - A. Trade deficit and Fiscal deficit
 - B. Fiscal deficit and Revenue deficit
 - C. Trade deficit and Revenue deficit
 - D. Current account deficit and Fiscal deficit
2. Which country is India's biggest trading partner?
 - A. USA
 - B. UAE
 - C. UK
 - D. China
3. With which of the following countries we have a positive balance of trade?
 - A. China
 - B. USA
 - C. Germany
 - D. Japan
4. Which is the most important item of India's export of services?
 - A. Travel and Tourism
 - B. Software Services
 - C. Business Services
 - D. Financial Services
5. JNNURM is a scheme of the Central Government for the development of:
 - A. Energy
 - B. Urban housing and basic infrastructure
 - C. Rural marketing of agricultural products
 - D. Education for Urban poor
6. A quinquennial survey is that which is conducted after every ____ years:
 - A. 3 years
 - B. 4 years
 - C. 5 years
 - D. 7 years
7. National Food Security Mission is a scheme of the Central government with the primary objective of:
 - A. Crop development
 - B. Distribution of food grains through fair price shops
 - C. Improvement of public distribution system
 - D. Concessional food availability to rural poor

8. Which of the following is not a rating agency?
- A. SMERA
 - B. CARE
 - C. FITCH
 - D. IRAL
9. The Goods and Services Tax [GST] has replaced:
- A. VAT
 - B. Securities Transaction Tax
 - C. Customs Duty
 - D. None of the above
10. In India the Wholesale Price Index is updated:
- A. Every week
 - B. Every fortnight
 - C. Every month
 - D. Every quarter
 - ~~E. Policy Related General Knowledge~~
11. He is one of the one of the founders and National Convenor of the Safai Karama-chari Andolan (SKA), an Indian human rights organization that has been campaigning for the eradication of manual scavenging, the construction, operation and employment of manual scavengers which has been illegal in India since 1993. He's also a recipient of Ramon Magasay Award. He refers to:
- A. P. Sainath
 - B. Bezwada Wilson
 - C. Sharad Joshi
 - D. Phansukh Wangdu
12. What is the contribution of Agriculture, Forestry and Fisheries to India's GDP (Gross Value Added (GVA) in current prices)?
- A. < 20%
 - B. Between 20 to 30%
 - C. >50%
 - D. <10%
13. Which city is the cleanest according to the latest Swachata Survekshan?
- A. Mysore
 - B. Coimbatore
 - C. Nainital
 - D. Indore

14. The Lakdawala committee, the Tendulkar committee & the Rangarajan committee refer to:
- A. Committees setup by GoI to assess defence spending requirement
 - B. Committees setup by GoI for poverty estimation
 - C. Committees setup by GoI to estimate drinking water requirement
 - D. Committees setup by GoI to initiate policy changes for easing red tape in bureaucracy
15. Consider the following statements about the consequences of Devaluation of Currency. Which is the correct statement:
- A. Exporters become more competitive in a global market.
 - B. It favors an improved balance of payments.
 - C. Reduce the cost of interest payments on its outstanding government debts.
 - D. All the above.
16. In the annual budget documents of the Government of India, 'Primary Deficit' refers to:
- A. Difference between revenue deficit of the current year and grants for capital creation
 - B. Difference between revenue deficit of the present financial year and grants to states and local bodies
 - C. Difference between budgetary deficit and capital deficit of the present financial year
 - D. Difference between fiscal deficit of the current year and interest payments on the previous borrowings
17. Under Ayushman Bharat Yojna launched in 2018, what is the amount that every eligible family under the programme is insured for?
- A. 10 lakhs INR
 - B. 5 lakhs INR
 - C. 3 lakhs INR
 - D. Varies from state to state
18. Consider the following with respect to Bureau of Indian standards
- I. It works under Ministry of commerce
 - II. It is a signatory to Code of Good practice for preparation, adoption and application of standards under WTO-TBT agreement
 - III. It played important role in implementation of Gold monetisation scheme

Select the correct answer:

- A. Both Choices II & III
- B. Both Choices I & III
- C. Both Choices I, II & III
- D. Both Choice III only

19. Gadgil committee and Kasturirangan Committee were constituted in connection to which mountain ranges?
- A. Western Ghats
 - B. Eastern Ghats
 - C. Aravalis
 - D. Himalayas
20. Under MNGREGA programme how many days of work is guaranteed to the work seeker (excluding drought prone areas)?
- A. 120 days
 - B. 75 days
 - C. 100 days
 - D. 50 days

Section: 1B – English Language [10 questions – 1 mark each]

Vocabulary: Please find the appropriate synonym for the underlined word:

1. The child apprized her father's authority and behaved herself in church.
Apprized means:
 - A. Appreciated
 - B. Compromised
 - C. Defied
 - D. Noted
2. The wound exhibited signs of copious drainage requiring medical intervention.
Copious means:
 - A. Minimal
 - B. Clear
 - C. Maximal
 - D. Foul
3. The bouncer's countenance discouraged brawls. Countenance means:
 - A. Message
 - B. Presence
 - C. Expression
 - D. Strength
4. The official exhibited a heedless attitude when dealing with the dignitaries.
Heedless means:
 - A. Thoughtless
 - B. Pleasant
 - C. Friendly
 - D. Bitter

Grammar: Please find the appropriate word(s) to complete the sentences below:

5. _____ of the rainbow were _____ against the bright blue sky.
 - A. Textures, Clear
 - B. Hues, Vivid
 - C. Alabaster, Bright
 - D. Line, Dark
 - E. Hues, Dark
6. Nonviolent demonstrations often create such tensions that a community that has constantly refused to _____ its injustices is forced to correct them: the injustices can no longer be _____ .
 - A. acknowledge .. ignored
 - B. decrease .. verified
 - C. tolerate .. accepted
 - D. address .. eliminated
 - E. explain .. discussed

7. It was her view that the country's problems had been _____ by foreign technocrats, so that to invite them to come back would be counterproductive.
- A. foreseen
 - B. attacked
 - C. ascertained
 - D. exacerbated
 - E. analyzed

Directions: Each question below consists of a word printed in capital letters, followed by five words or phrases. Choose the lettered word or phrase that is most nearly **opposite in meaning** to the word in capital letters.

8. AMALGAMATE:

- A. study
- B. circulate
- C. reduce
- D. endure
- E. separate

9. POLEMICAL:

- A. imitative
- B. lavish
- C. conciliatory
- D. attractive
- E. modest

10. DEFERENCE:

- A. aversion
- B. resignation
- C. intractability
- D. inattention
- E. contempt

Section: 1C - Data Analysis [15 questions - 1 mark each]

1. In a mixture 60 litres, the ratio of milk to water is 2:1. If this ratio is to be 1:2, then the quantity of water to be further added is:
A. 20
B. 30
C. 40
D. 50
E. 60
2. A train travelling at 60 km per hour enters a tunnel that is 5 km long. The train is 1000m long. How many minutes does it take for the whole train to pass through the tunnel?
A. 7
B. 4
C. 10
D. 5
E. 6
3. The average Indian taxpayer has a 5 percent chance of being randomly selected for an audit. Of those being audited, 70 percent are found to have underpaid their taxes and will have to pay extra. What percentage of all taxpayers will have to pay extra following an audit?
A. 0.35%
B. 3.5%
C. 35%
D. 7.5%
E. None of the above
4. A certain pet store sells only dogs and cats. In March, the store sold twice as many dogs as cats. In April, the store sold twice the number of dogs that it sold in March, and three times the number of cats that it sold in March. If the total number of pets the store sold in March and April combined was 500, how many dogs did the store sell in March?
A. 80
B. 100
C. 120
D. 160
5. Six people meet for a business lunch. Each person shakes hands once with each other person present. How many handshakes take place?
A. 12
B. 13
C. 18
D. 15

Refer to the figure below and answer the following questions (Q. 6 to 10):

Number of new titles published by XYZ Publishers in five consecutive 5-year periods' by gender of author						
Category	Gender	Period				
		1	2	3	4	5
Fiction - romantic	M	2	-	4	1	2
	F	25	20	16	18	18
Fiction - historical	M	5	4	3	-	1
	F	10	6	7	5	2
Fiction - sci-fi	M	4	5	4	6	7
	F	1	1	1	1	-
Fiction - crime	M	15	15	18	15	20
	F	12	10	8	8	9
Fiction - other	M	10	15	18	30	35
	F	6	4	9	10	12
Autobiography & biography	M	40	45	50	25	24
	F	20	15	12	25	28
Non-fiction - general	M	25	21	20	16	15
	F	3	2	1	-	2

6. Over the whole five 5-year periods shown in the table, in which of the categories below does XYZ publishers publish the greatest number of new titles?
 - A. Non-fiction and General
 - B. Fiction and historical
 - C. Autobiography and Biography
 - D. Fiction and crime

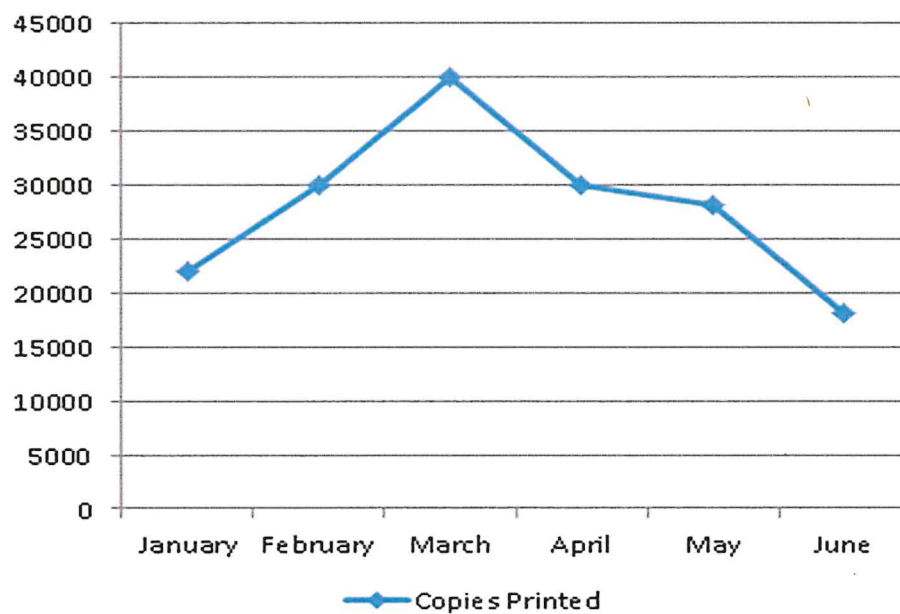
7. In how many of the categories shown on the table does the number of new titles by female authors exceed the number of new titles by male authors in the ten-year period represented by periods 4 and 5?
 - A. 2
 - B. 3
 - C. 4
 - D. 1

8. Which of the following can be correctly deduced from the table?
 - A. In the Fiction sci-fi category over the 25-years depicted in the table the ratio of new titles by female authors to those by male authors is 1:6
 - B. The average (arithmetic mean) number of titles published each five-year period in the category Fiction - Historical is 8.6
 - C. The total number of new titles published in period 5 is greater than the total number of new titles published in period 4

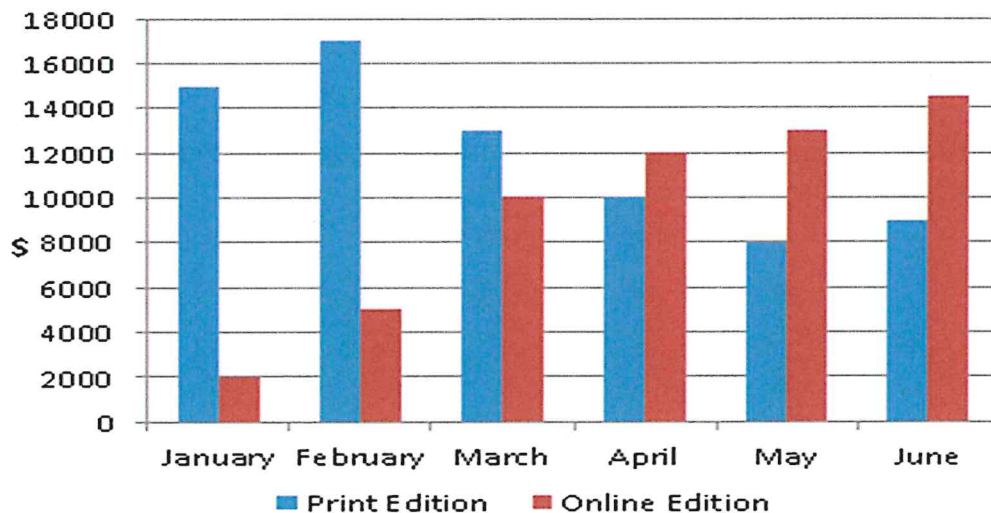
9. If the gender ratio is defined by the publisher as the number of new titles published by male authors divided by the number of titles published by female authors, then, in Period 3, in how many of the seven categories shown in the table is the gender ratio less than or equal to 2?
- A. 1
B. 2
C. 3
D. 5
10. Which of the following figures is the closest to the value of new titles in the Fiction-romantic category in period 5, as a percent of new titles in all the Fiction categories in Period 5?
- A. 30
B. 22
C. 20
D. 15

Refer to the following graphs to answer the questions that follow (Q. 11 to 15):

**Numbers of copies of Techno Magazine
printed per month over a six-month
period**



**Advertising Revenues from printed and
online editions of Techno Magazine
over a six-month period**



11. Which of the following can be correctly deduced from the data? (Select ALL that apply).
- I. The total number of Techno magazines printed over the given 6-month period was less than 200,000
 - II. In May approximately 28,000 copies of Techno magazine were sold
 - III. The average (arithmetic mean) monthly number of copies of Techno printed in this period was less than 30,000.

Choices:

- A. I & II
- B. I & III
- C. II & III

12. Between which two of the months shown was there a twenty percent rise in online advertising revenues?

- A. January and February
- B. February and March
- C. March and April
- D. April and May

13. If in February each magazine printed cost \$1.50 to produce, which of the following is closest to the fraction of the production costs that were covered by the advertising revenues from the print version?

- A. $\frac{1}{5}$
- B. $\frac{2}{5}$
- C. $\frac{3}{5}$
- D. $\frac{4}{5}$

14. The total advertising revenues (printed version + online version) were highest in which of the following months?
- A. May
 - B. March
 - C. June
 - D. February
15. During the six-month period shown, the median number of copies printed per month was most nearly
- A. 30,000
 - B. 28,000
 - C. 29,000
 - D. 25,000