

Indian Statistical Institute, Bangalore

B. Math. Third Year

Sixth Semester – Economics II

End-term exam

Duration: 3 hours

Date: April 29, 2026

Total marks: 50

Section A: One-mark questions, All questions compulsory

(15 X 1 = 15)

Q1. In a feudal system of agriculture, surplus is extracted mainly through:

- a) Profits
- b) Wages
- c) Rent and labour services
- d) Interest

Q2. The Permanent Settlement introduced by the British in 1793 primarily:

- a) Changed the distribution of land throughout India
- b) Created a class of Zamindars who extracted rent from the tillers
- c) Promoted cooperative form of agriculture
- d) Distributed land to the tiller

Q3. Which of these sentences provides a good description of the Green Revolution:

- i) The Green Revolution spread in rainfed regions with the introduction of high-yielding varieties of rice seeds
- ii) The Green Revolution bypassed eastern India in the early phase
- iii) The Green Revolution was dependent on combining HYV seeds with irrigation and fertilisers
- iv) The Green Revolution was only successful because of new machinery and fertilisers

Which of the above are correct?

- a) (i) and (ii)
- b) (ii) and (iii)
- c) (i) and (iii)
- d) All of the above

Q4. A feature of Indian agriculture at independence was:

- i) Stagnation in yield of food crops
- ii) Distribution of land into small and equal parcels
- iii) Insecurity of tenure

Which of the above are correct?

- a) (i) and (ii)
- b) (ii) and (iii)
- c) (i) and (iii)
- d) All of the above

Q5. In 1991, there was a policy shift in India. With respect to agriculture, this led to:

- a) Increased role of markets, redistribution of land, and more credit for agriculture
- b) More collective forms of agriculture, decline of input subsidies, and an increase in priority sector lending by banks
- c) Liberalisation of trade, reduced state expenditure, and closure of rural bank branches
- d) None of the above

Q6. Following the work of Simon Kuznets on structural transformation in an economy, an environmental Kuznets curve has been proposed. This curve shows:

- a) A positive linear relationship between the level of environmental degradation and the growth of GDP
- b) A negative linear relationship between the level of environmental degradation and the growth of GDP
- c) No relationship between the level of environmental degradation and the growth of GDP
- d) An inverted-U relationship between the level of environmental degradation and the growth of GDP

Q7. The phrase 'Tragedy of the Commons' was introduced by G. Hardin to explain the following:

- a) regulation by the state of private property
- b) private interest leading to depletion of common resources
- c) expansion of common areas at the expense of private property
- d) All of the above

Q8. Private investment in agriculture in India today is largely in

- (i) Machinery and herbicides-pesticides
- (ii) Canal irrigation and agricultural extension
- (iii) New varieties of rainfed crops
- (iv) Food processing, storage, and transport

Which of the above are correct?

- a) (i) and (iv)
- b) (ii) and (iii)
- c) (i) and (iii)
- d) (ii), (iii) and (iv)
- e) (i) and (ii)

Q9. Financial liberalisation in India weakened rural credit because of:

- a) Increased subsidies for fertilizers
- b) Closure of rural bank branches
- c) Expansion of cooperative banks
- d) Rise in regulation of informal credit

Q10. According to Amartya Sen, extreme hunger and starvation in a famine situation can be summarised as arising out of:

- a) A decline in food availability
- b) A reduction in food production
- c) A collapse of entitlements to food
- d) A demographic imbalance

Q11. Which of these are correct about the headcount ratio?

- a) ignores distribution among the poor
- b) ignores the depth of poverty
- c) is simple to compute
- d) all of the above

Q12. The income gap measure of poverty does not satisfy:

- a) transfer axiom
- b) monotonicity axiom
- c) transfer sensitivity axiom
- d) all of the above

Q13. Which of the following statements are consistent with the Kuznets hypothesis on inequality and economic development?

- a) As GDP increases, the share of the workforce in agriculture declines.
- b) Structural transformation from agriculture to industry initially increases inequality.
- c) Income differences between sectors contribute to rising inequality in early stages of development.
- d) Early development is associated with uniform income growth across sectors.

Which of the above are correct?

- 1. (a), (b), (c)
- 2. (a), (b), (d)
- 3. (a), (c), (d)
- 4. (b), (c), (d)
- 5. all of the above

Q14. Which of the following best explains the relationship between poverty and environmental degradation in the context of environment and development?

- a) Poverty leads to sustainable use of resources, and the poor are rarely affected by environmental damage
- b) The poor degrade resources due to overconsumption, and they benefit from environmental degradation
- c) The poor have limited access to resources, are often victims of environmental damage, and poverty traps them in this cycle
- d) Environmental degradation is caused only by industrial sectors and has no relation to poverty

Q15. According to the Phillips Curve, in the short run:

- a) Inflation and unemployment are positively related
- b) Inflation and unemployment are not related
- c) Inflation and unemployment are inversely related
- d) None of the above

Section B: Two-mark questions (Answer any eight)

(8 x 2 = 16)

1. Distinguish between the feudal and the capitalist modes of agriculture.
2. Give two features of the agrarian crisis under colonial rule.
3. State two objectives of land reforms in India after independence.
4. Explain why the headcount ratio is an inadequate measure of poverty. Give an alternate measure.
5. State one achievement and one limitation of the Green Revolution.
6. During the colonial period, what was the “triple burden” on the peasantry?

OR

State the difference between the Ryotwari system and the Mahalwari system of land revenue.

7. What is the difference between frictional unemployment and structural unemployment?
8. What types of environmental problems do the rural and urban poor share? What are some differences in the conditions they face?
9. State the transfer axiom and transfer sensitivity axiom in the measurement of poverty.
10. In terms of structural composition of the workforce and GDP, how is India’s path different from the experience of the USA or Germany during their main phase of development?

Section C: Three-mark questions (Attempt any three)

(3 X 3 = 9)

1. Define the Foster-Greer-Thorbecke (FGT) Index. Solve the following numerical example: Consider a 10-person economy with a poverty line of 2, and the income distribution of the 10 people is (1.5, 2, 2.5, 0.8, 3, 3.5, 8, 7.5, 3 and 6). The headcount ratio is 2. Using these numbers, find the P2 level of poverty.

2. Did regional inequalities increase during the Green Revolution? If yes, why? If not, why not?
3. Does poverty lead to environmental degradation? Explain with examples.
4. What is the difference between absolute and relative poverty? Explain with examples.
5. Explain the difference between purely private and public goods and how it applies to environmental problems faced by developing countries. What are the implications of the free-rider problem for the allocation of a public good?
6. Explain in brief
 - a. Discouraged worker effect
 - b. Demographic dividend
7. Define priority sector lending in the credit policy. How was this affected by financial liberalisation? What were the overall effects of financial liberalisation on rural credit?
8. Using the table below, write three comparative points about the regional aspects of growth in the value of output from agriculture across different phases.

Table – State and region-wise growth of value of output from agriculture, 1962-65 to 2005-08 in per cent

State and Region	Annual compound growth rate (%)		
	1962-65 to 1980-83	1980-83 to 1990-93	1990-93 to 2005-08
Haryana	3.74	5.04	2.35
Himachal Pradesh	2.01	2.74	0.68
Jammu and Kashmir	4.31	0.17	0.61
Punjab	5.58	4.22	1.64
Uttar Pradesh	2.67	3.06	1.31
North-west region	3.39	3.55	1.54
Assam	2.38	2.42	-1.73
Bihar	0.27	2.07	1.23
Orissa	1.91	2.86	-0.27
West Bengal	1.43	5.98	1.8
Eastern region	1.3	3.61	0.78
Gujarat	2.52	0.9	4.7
Madhya Pradesh	1.59	4.52	2.03
Maharashtra	1.91	1.92	3.86
Rajasthan	2.59	6.06	2.61
Central region	2.06	3.27	3.23
Andhra Pradesh	2.41	3.4	2.54
Karnataka	2.46	3.66	2.13
Kerala	1.28	1.77	1.74
Tamil Nadu	0.9	4.06	1.16
Southern region	1.82	3.41	1.98
India	2.24	3.37	2.1

Section D: Five-mark question (Attempt any two)

(5 X 2 = 10)

Q1. Critically evaluate the implications of the Green Revolution in India for:

- a) Productivity
- b) Class inequality
- c) Regional inequality
- d) Environment sustainability

Q2. Elaborate on 4-5 features of economic liberalisation (post-1991) in India that affected agriculture and rural households.

Q3. Using the data below, identify key changes in the indicators of household debt among cultivator households in rural India in the last few decades.

Table: *Selected basic indicators of household debt in rural India, rural and cultivator households, AIDIS, 1992 to 2013 in number and per cent*

Type of household/Item	1992	2002	2013
(a) Debt-asset ratio			
Cultivator households	1.6	2.5	2.8
All rural households	1.8	2.8	3.2
(b) Share of institutional sources in total debt (%)			
Cultivator households	66.3	61.1	58
All rural households	64	57.1	56
(c) Share of commercial banks in total debt (%)			
Cultivator households	35.2	26.3	27.7
All rural households	33.7	24.5	25.1
(d) Share of non-institutional sources in total debt (%)			
Cultivator households	30.6	38.9	41.6
All rural households	32.7	42.9	44
(e) Share of moneylenders in total debt (%)			
Cultivator households	17.5	26.8	31.5
All rural households	17.5	29.6	33.2

Q4. What are the limitations of conventional national accounting systems in accounting for the environment? Does 'Green GDP' address these limitations?

Q5. (a) Define steady state unemployment.

Given:

Job separation rate (s) = 0.04

Job finding rate (f) = 0.16

(b) Calculate the steady-state unemployment rate.

(c) If f increases to 0.20, what happens?