(ii) Benefit derived from spending an additional year on education decreases.

8. Answer the following questions : (8+7=15)

(a) *"National data on learning achievement levels in ASER 2005 (Pratham, 2006) found that private school students of grades 2-5 were 37.4 percent more likely than government school students to be able to read a text of grade 2 standard."* In the light of above statement, critically analyze the relative effectiveness of private schooling in the Indian context on learning achievements.

(b) In continuation of Part (a), it is being observed that students' educational performance may not increase just by increasing monetary resources. Improving teachers' quality is critical for it. Discuss.

[This question paper contains 8 printed pages.]

Sr. No. of Question Paper : 3728   **E**

Unique Paper Code : 12277613

Name of the Paper : Economics of Health and Education

Name of the Course : **B.A. (H) Economics**

Semester : VI

Duration : 3 Hours   Maximum Marks : 75

Any graphs/figures/diagrams in the question paper have been taken from the prescribed readings.

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.

2. Attempt any **five** questions in all.

3. Use of scientific calculator is allowed.

P.T.O.

1. Suppose there is a population of individuals whose number is normalized to one. Let $n \in [0,1]$ be the fraction of individuals immunized against a particular disease. The probability of contracting the infectious disease by a non-immunized person is given by $p(n) = 0.4(1-n)^2$. Assume that the vaccination provided is fully effective. Individuals are identical in all respects and the cost of illness is assumed to be the same across all individuals and is equal to one. The marginal cost of the vaccination is constant, given by $c=0.1$. Based on this information, answer the following questions :

(a) Derive the private and social marginal benefit. What is the relationship between the two?

(b) Derive and show diagrammatically the private optimum and the social optimum. How will these private and social optima change when the probability of contracting the disease by an individual increases to 0.8 assuming none in the population is immunized?

(c) In the light of the above analysis, discuss the possible reasons that make the government pursue full immunization?　　　　(4+6+5=15)

(i) Find the equilibrium wage and employment levels.

(ii) Now, suppose that the demand for doctors increases and the new demand curve is $L'_D = 66 - W$. Assume that this market is subject to cobweb adjustments as it takes about four years to produce people who specialize in medicine. While this adjustment is taking place, the short-run supply of doctors is fixed.

A. Calculate the new long run equilibrium wage and employment levels.

B. Calculate the wage and employment levels in each of the first three rounds of adjustments.

C. Draw a graph to show these events.　　　　(8)

(b) With the help of diagrams, explain what will happen to the acquisition of human capital if :

　　　　(3.5+3.5=7)

(i) Cost of getting education for an additional year increases

P.T.O.

6. Answer the following questions :

(a) *"The most significant problem faced in evaluating the net impact on social welfare of health projects is the valuation of benefits."* In the light of the above statement, explain various methods of measuring benefits under cost-benefit analysis (CBA).

(b) Consider a situation where three drugs are available to treat a particular disease. The probability of avoiding a death changes as follows :

Drug 1 from 0.2 to 0.34 and costs \$5 per treatment

Drug 2 from 0.2 to 0.27 and cost \$7 per treatment

Drug 3 from 0.2 to 0.47 and costs \$3 per treatment

Calculate the Cost effectiveness (C/E) of each drug. Which drug is most cost-effective?

(12+3=15)

7. Answer the following questions :

(a) Suppose that the supply curve for doctors is given by $L_s = -6 + 0.6W$ while the demand curve is given by $L_D = 50-W$, where W = annual earnings and L = number of doctors.

2. Answer the following questions :   (10+5=15)

(a) *"Evidence shows the presence of stunting and absence of any wasting among privileged Indian children."* Discuss the possible hypothesis trying to explain this phenomenon.

(b) Consider two households A and B with the following information :

	Household A	Household B
Total Income	Rs. 10,00,000	Rs. 400,000
Household Size	10	5

Which household is richer compared to the other household? Elucidate your answer giving economic theories.

3. Answer the following questions :   (9+6=15)

(a) Comment on the causal links between health and education, both from inter-generational and intra-generational perspectives.

(b) Calculate Human Development Index with the following data: Life expectancy (years): 72.6,

Mean Years of Schooling: 8.4, Expected Years of Schooling: 19, Gross National Income per capita (PPP \$): 32045 [ln (75000) = 11.23, In (100) = 2, ln (32045) = 4.5057]. While creating the dimension index for a decent standard of living why it is the natural logarithm of income being used?

4. Smoking is injurious to health, yet there are people who put high valuation on smoking. Consider a society with 100 individuals, represented by $i = 1,2,3,..., 100$, where some individuals are chain smokers, some get positive utility out of smoking (but are not chain smokers) and some hate smoking. Suppose these individuals are arranged in the descending order of their marginal valuation of smoking (v_i), given by $v_i = 24 - 2i$. It is assumed that the marginal cost attached to smoking increases with the number of smokers in the society and is given by: $MC = 2i$. Given this information, answer the following questions :

(a) At what position is the person who is indifferent between smoking and non-smoking sitting on the marginal valuation line?

(b) What is the efficient number of smokers in this society?

(c) What are the costs and benefits to the society when only efficient number of smokers is allowed to smoke in the society? Represent it through a diagram.

(d) How can government ensure that only efficient number of smokers should smoke in the society?
(3+3+4+5=15)

5. Answer the following questions :

(a) Using appropriate diagrams, analyze the effect on relative wages of females to males when there is (4+4=8)

  (i) An increase in the discriminatory preferences of employers.

  (ii) A decrease in the number of females in the labour market

(b) Discuss the arguments regarding the role of education put forward by both the advocates of education as 'signalling' and education as 'Human Capital Investment'. (7)