

SAMPLE QUESTION PAPER—D

1. (b) Under the exclusive method the upper class limit of a class is excluded in the class interval.
2. (c) A range is difference between the largest and the smallest observations.
3. (a) The unit of correlation coefficient between height in feet and weight in kgs is non-existent.
4. (b) The year 1921 is regarded as the great dividing year in India's demographic history because after 1921 India entered the second stage of demographic transition.
5. (c) Primary sector has the lowest contribution in gross domestic product in both the countries of India and Pakistan.
6. The following are some of the notable economists who were engaged in estimation of national income and per capita income :

(i) Findlay Shirras
 (iii) R. C. Desai
 (v) Dadabhai Naoroji

(ii) William Digby
 (iv) V K R V Rao

Out of the these, V K R V Rao's estimates are considered to be significant. Most of these studies revealed that Indian Economy grew at even less than two per cent during the first half of the twentieth century *i.e.* during 1900 – 1950 with half per cent growth in per capital output per year.

7. **Linear Correlation :** Linear correlation is said to exist if the amount of change in one variable tends to bear a constant ratio to the amount of change in the other variable. The graph of variables having such a relationship will form a straight line.

X	10	20	30	40
Y	5	10	15	20

In the given schedule, there is a linear relationship between variable X and variable Y as ratio (2 : 1) of change between X and Y is the same.

Non-Linear correlation : In non-linear correlation, the amount of change in one variable does not bear a constant ratio to the amount of change in the other related variable. For example, when we double the use of fertilizers, the production of rice would not necessarily double. When the values of the two variables are plotted graphically, these points would not give a straight line.

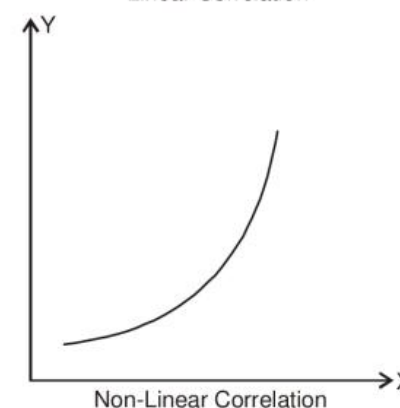
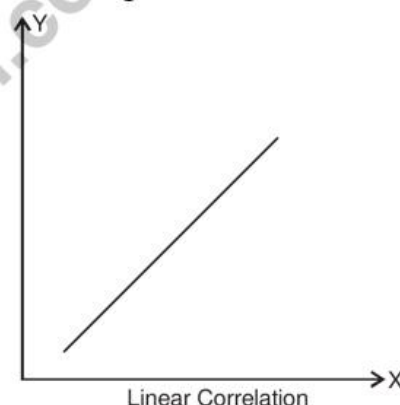
X	10	20	30	40
Y	5	7	12	20

Thus, from the above example it is clear that the ratio of change between two variables (X and Y) is not the same. $1\frac{1}{2} + \frac{1}{2}$

8. The statistical data provide the base for the government and the policy makers to formulate policies. The statistical data not only help them to analyse and evaluate the outcomes of the past policies but also assist them to take corrective measures and to formulate new policies. The statistical data also help the government to formulate the relationship between economic variables and form policies accordingly.

For example, if Indian Government aims at increasing the national output, then it formulates its investment expenditure policy based on the capital output ratio in the past few years. Another example could be the preparation of monetary policy. The previous data of inflation and economic growth are taken into consideration for estimating the money supply required in the next period. [3]

9. Values involved here- Responsibility, Transformation, Initiative and Critical Thinking and Policy Implementation, Privatisation in power generation sector is not a dual core objective of the Indian government as justified the following.
 - (i) The steep line in power usage rates all commensurate with the range of services and facilitates being offered by the new private power generation and distribution companies.



- (ii) Improved technology of transmission and distribution alongwith new electric lines and sub-stations have injured efficiency and thereby eliminated wastage. 1 + 1 + 1

10. Variable : A measurable characteristic which takes different values at different points of time and in different circumstances is called a variable as it keeps varying. Different variables vary differently and depending on the way they vary, they are broadly classified into two types :

Discrete Variable	Continuous Variable
(i) A discrete variable can take only whole numbers.	(i) A continuous Variable can take any numerical value.
(ii) Discrete variables increase in finite jumps from one value to another and cannot take any intermediate value between them.	(ii) Continuous variables can take any conceivable value and can be broken into infinite gradations.
(iii) Examples, number of residents in a colony, number of workers in a factory etc.	Examples : Weight, height, distance etc.

1 + 2

11.

Workers	Daily income (in ₹) (X)
A	120
B	150
C	180
D	200
E	250
F	300
G	220
H	350
I	370
J	260
Total	$\Sigma X = 2400$

$$N = 10$$

$$\bar{X} = \frac{\Sigma X}{N} = \frac{2400}{10}$$

$$= 240$$

$$\text{Arithmetic mean} = ₹ 240$$

3

12. The focus of the industrial policies pursued by the colonial government in India was to make our country a mere supplier of Britain's own flourishing industrial base. The policies were concerned mainly with the fortification and advancement for their own country. The industrial policy pursued by the British colonial administration has the following shortfalls :

- (i) **Lack of investment in Indian industries :** The modern industries in India demanded investments in capital goods that were beyond the means of Indian investors. On the other hand, British government was least interested in investing in Indian industries. Thus, due to the lack of sufficient investment, the growth of Indian industries were acutely constrained.
- (ii) **Neglect of Indian handicraft industries :** The British followed a discriminatory tariff policy under which they imposed heavy tariffs (export duties) on India's export of handicraft products while allowed free export of India's raw material to Britain and free import of British products to India. This made Indian exports costlier and its international demand fell drastically leading to the collapse of handicraft industries. 1½ + 1½

- 13.** (a) Different components of cost in a factory can most effectively be depicted through a pie chart. The circle represents the total cost and various components of costs are shown by different portions of the circle drawn according to percentage of the total cost each component covers.
- (b) The monthly rainfall in a year can be best represented by a bar diagram as only one variable i.e., monthly rainfall is to be represented diagrammatically. The rainfall is plotted on Y-axis in the corresponding month that is plotted on the X-axis.

- (c) Composition of the population of a city by religion can be represented by a component bar diagram. A component bar diagram shows the bar and its sub-divisions into two or more components. Thus, the total population can be sub-divided in terms of religion and presented through a component bar diagram. 1 × 3

14. On the basis of time, credit needs of the farmers can be classified into three categories :

- (i) **Short-term credit** : It refers to credit taken to meet short-term needs (period less than 15 months) viz., purchasing seed, fertilizers and paying wages to hired workers etc. The loans taken for short period can be repaid out of the current income of the farmers.
- (ii) **Medium-term Credit** : Period of medium-term credit ranges from 15 months to 5 years and is required for the purpose of buying cattle, agricultural implements, etc. They are also needed for meeting various unproductive expenditures like expenditure on marriage, social or religious functions.
- (iii) **Long-term Credit** : Long-term loans are required for effecting permanent improvements on land, digging tubewells, purchase of larger agricultural implements and machinery. Long-term funds are needed for a period of more than 5 years and may extend to a period of 15 to 20 years. Such loans are repaid over a long period of time. 1 × 3

15.

Size of land holding class interval	No. of families (+)	Cumulative frequency (c.f.)
0–100	40	40
100–200	89	129
200–300	148	277
300–400	64	341
400–500	39	380
Total	$\Sigma f = 380$	

$$\Sigma f = N = 380$$

So, the median class = Size of $\left(\frac{N}{2}\right)^{\text{th}}$ term

$$= \left(\frac{380}{2}\right)^{\text{th}} \text{ term}$$

$$= 190^{\text{th}} \text{ term}$$

190th term lies in the 129th cumulative frequency and the corresponding class interval is 200–300.

So,

$$\text{Median} = L + \frac{\frac{N}{2} - \text{c.f.}}{f} \times i$$

$$= 200 + \frac{190 - 129}{148} \times 100$$

$$= 200 + \frac{61}{148} \times 100$$

$$= 200 + 41.22$$

$$= 241.22$$

$$\text{Median size of land holdings} = 241.22 \text{ acres}$$

4

16. Rank correlation coefficient differs from Pearsonian correlation coefficient in the following ways :

- (i) Rank correlation coefficient is generally lower or equal to Karl Pearson's coefficient.
- (ii) The rank correlation coefficient uses ranks instead of the full set of observations that leads to some loss of information.
- (iii) Rank correlation coefficient is preferred to measure the correlation between qualitative variables as these variables cannot be measured precisely.
- (iv) If extreme value are present in the data, then the rank correlation coefficient is more precise and reliable. 1 × 4

17. Education has a very important role in the economic development of a nation, which is evident from the following points :

- (i) **Enhancing knowledge and skills :** A better educated person has greater skill and knowledge which enhance productivity and therefore provide a greater opportunity to work and earn higher income.
- (ii) **Reduction in income inequality :** Education enhances the income earning capacity of people from economically backward sections of the country and thus reduces the inequalities in the distribution of income.
- (iii) **Absorption of Modern Technology :** Education develops the skill and knowledge base required for understanding and adopting modern technology. This helps in increasing productivity, output and economic development of the nation.
- (iv) **Research and Development :** Education helps in preparing learned scientists and researchers in various subjects, who are involved in research and development activities to bring out innovative products, technologies and processes and thus add the economic development of the nation.
- (v) **Participation Rate :** Education makes a greater proportion of population capable of participating in the economic, social and political activities of a nation thus raising the participation of people in the development process. 1 × 4 [Any four]

18. Following are the characteristics of a good questionnaire :

- (i) Questions must worded simply and clearly, not ambiguous or vague. It must be objective.
- (ii) Order questions in a logical sequence.
- (iii) Attractive in appearance (questions spaced out and neatly arranged).
- (iv) Write an introduction to the questionnaire.
- (v) Write a descriptive title for the questionnaire.
- (vi) Define each and every term.
- (vii) Keep questionnaire uncluttered and easy to complete.
- (viii) Design for easy tabulation.
- (ix) Design to achieve objectives.
- (x) Avoid double negatives (They haven't no car). ½ × 8 [Any eight]

19. The following are the suggestions that can generate employment opportunities in village:

- (i) **Increase production :** It is of prime importance to increase production in the agricultural and industrial sectors in order to increase employment. For this purpose, small scale and cottage industries should be promoted. This will not only generate new employment opportunities but also assist the industrial sector, as the production of the small scale and Cottage Industries Act as subsidiaries to the industrial sector.
- (ii) **Increase productivity :** The demand and productivity for labour are directly related to each other. The higher productivity generates higher profits that in turn implies higher investment and generates higher demand for labour. Rural workers should be imparted technical knowledge and modern know how that will not only increase their productivity but also enhance their acceptability of modernisation.
- (iii) **Control over population :** Population explosion is one of the important concerns for India. It widens economic growth prospects. The rising population leads to the rise in unemployment and therefore, poverty. Thus, rural people should be aware of various birth control measures and also the benefits associated with family planning and nuclear family.
- (iv) **Creating non-agricultural employment :** India being an agrarian economy employs a major proportion of workforce in the agricultural sector. The development of this sector is still a far cry and, consequently, suffers from disguised unemployment. Moreover, as agriculture is a seasonal occupation, so, many farmers remain unemployed for 3 to 4 months in a year. Thus, it is necessary to engage these people in non-agricultural sectors for the phase they are off from cultivation. Creation of non-agricultural jobs like pottery, handicrafts, not only reduces disguised unemployment but also contributes to enhanced income of the farmers in the off-season, which could be invested in the farm to improve farm productivity and farm products.
- (v) **Easy credit and finance :** Often, the rural people find it difficult to access finance due to the lack of financial institutions in the rural areas. Even if the finance or the credit is available,

then this is provided at the higher lending rates. The lack of credit, acts as a bottleneck for the rural growth. thus financial institutions and banks should be set up to provide easy credit to the rural people.

- (vi) **Education and health facilities** : Rural areas have always lagged behind in education and health care facilities. This not only impedes their productivity but also reduces their life expectancy and quality of standard of living. Alongwith primary and secondary schools night schools for adults, imparting technical education and technical know how, proper sanitation and hospitals should be established in the rural areas.

20. (a) Let the missing frequency be f_1 . Arithmetic Mean = 28

Profit Per Retail Shop (in ₹) Class Interval	No. of Retail Shops (f)	Mid value (m)	fm
0-10	12	5	60
10-20	18	15	270
20-30	27	25	675
30-40	f_1	35	$35f_1$
40-50	17	45	765
50-60	6	55	330
	$\Sigma f = 80 + f_1$		$\Sigma fm = 2100 + 35f_1$

$$\bar{X} = \frac{\Sigma fm}{\Sigma f}$$

or

$$= 28 = \frac{2100 + 35f_1}{80 + f_1}$$

or

$$= 2240 + 28f_1 = 2100 + 35f_1$$

$$= 2240 - 2100 = 35f_1 - 28f_1$$

or

$$140 = 7f_1$$

or

$$f_1 = 20$$

Hence the missing frequency is 20.

(b)

Class Interval	Frequency	Cumulative Frequency
0-10	12	12
10-20	18	30
20-30	27	57
30-40	20	77
40-50	17	94
50-60	6	100
Total	$\Sigma f = 100$	

$$\Sigma f = N = 100$$

So,

the median class = Size of $\left(\frac{N}{2}\right)^{\text{th}}$ item

$$= \left(\frac{100}{2}\right)^{\text{th}} \text{ item}$$

$$= 50^{\text{th}} \text{ item}$$

50^{th} item lies in the 57^{th} cumulative frequency and the corresponding class interval is 20-30.

$$\text{Median} = L + \frac{\frac{N}{2} - \text{c.f.}}{f} \times 10$$

$$= 20 + \frac{\frac{100}{2} - 30}{27} \times 10$$

$$= 20 + \frac{50 - 30}{27} \times 10$$

$$= 20 + \frac{20}{27} \times 10$$

$$= 27.40$$

21. Values involved here-Need Analysis, Responsibility, Initiatives, Transparency, Collaboration and Coordination. As a student, pursuing education in the current educational system, would present the following challenges and my recommendations for the same : 1

- (i) A cute shortage of skilled lecturers who possess the required qualifications as per norms of UGC (University Grants Commission).
- (ii) Unaccredited institutions of education at the higher levels are sprawling in the market.
- (iii) Infrastructure crunch in terms of classes, labs, sports facilities etc.
- (iv) Absolute syllabus and curriculum. $\frac{1}{2} \times 4$

Recommendations are as follows :

- (i) Accreditation of institutions of education at the higher levels should be carefully granted.
- (ii) Provision of qualified and skilled lecturers, alongwith modern infrastructure.
- (iii) Reviewing of syllabus and curriculum. 1 $\times$ 3

22 For Brand A

Life (In hrs)	No. of Bulbs (f)	MX	A = 125 X - A = d	$d = \frac{X-A}{i}$	d^2	fd	fd ²
0-50	15	25	-100	-2	4	-30	60
50-100	20	75	-50	-1	1	-20	20
100-150	18	125	0	0	0	0	0
150-200	25	175	50	1	1	25	25
200-250	22	225	100	2	4	44	88
	$\Sigma f = 100$					$\Sigma fd = 19$	$\Sigma fd^2 = 193$

$$\bar{X} = A + \frac{\Sigma fd}{\Sigma f} \times i$$

$$= 125 + \frac{19}{100} \times 50$$

$$= 134.5$$

$$\sigma = \sqrt{\frac{\Sigma fd^2}{\Sigma f} - \left(\frac{\Sigma fd}{\Sigma f}\right)^2} \times i$$

$$= \sqrt{\frac{193}{100} - \left(\frac{19}{100}\right)^2} \times 50 = \sqrt{\frac{193}{100} - \frac{361}{10000}} \times 50$$

$$= \sqrt{\frac{18939}{10000}} \times 50 = 68.5$$

$$CV = \frac{\sigma}{\bar{X}} \times 100 = \frac{68.5}{134.5} \times 100$$

$$= 50.93$$

For Brand B

Life (In hrs)	No. of Bulbs (f)	Mid value (m)	A = 125	$d = \frac{X-A}{C}$	d^2	fd	fd ²
0-50	2	25	-100	-2	4	-4	8
50-100	8	75	-50	-1	1	-8	8
100-150	60	125	0	0	0	0	0
150-200	25	175	50	1	1	25	25
200-250	5	225	100	2	4	10	20
	$\Sigma f = 100$					$\Sigma fd = 23$	$\Sigma fd^2 = 61$

$$\begin{aligned}
\bar{X} &= A + \frac{\sum fd}{\sum f} \times i \\
&= 125 + \frac{23}{100} \times 50 \\
&= 136.5 \\
\sigma &= \sqrt{\frac{\sum fd^2}{\sum f} - \left(\frac{\sum fd}{\sum f}\right)^2} \times i \\
&= \sqrt{\frac{61}{100} - \left(\frac{23}{100}\right)^2} \times 50 \\
&= \sqrt{\frac{61}{100} - \frac{529}{10000}} \times 50 \\
&= \sqrt{\frac{5571}{10000}} \times 50 \\
&= 37.5 \\
CV &= \frac{\sigma}{\bar{X}} \times 100 \\
&= \frac{37.5}{136.5} \times 100 \\
&= 27.47
\end{aligned}$$

(i) The average life of Brand B is comparatively higher than that of Brand A.

(ii) The bulbs of Brand B are more dependable as CV of Brand B is lesser than CV of Brand A.

23. The importance of employment generation programmes in poverty alleviation efforts in India are as follows :

- (i) **Direct relationship between employment and poverty alleviation :** There exists a positive relationship between employment and poverty alleviation. If government aims at creating new employment opportunities, then more people will be employed that will raise their income and, thus, will pull them above the poverty line. **1**
- (ii) **Higher standard of living :** With the increase in income, consequent to the new employment opportunities, poverty trodden people can enjoy higher standard of living and greater accessibility to education, better health facilities, proper sanitation, etc. **1**
- (iii) **Reduce rural-urban migration :** Poor people tend to migrate from rural to urban areas in sought of better employment and earning opportunities to these migrants. Failure of this leads to formation of sector that makes these people more vulnerable in the urban areas. A positive point of employment generation programmes is that it generates ample employment opportunities in rural areas so as to reduce rural-urban migration. **1**
- (iv) **Creation of durable assets :** The employment generation programmes aim at creation of durable assets like watershed development works, water harvesting, irrigation facilities, canal building, construction of roads connecting rural areas to urban areas and construction of dams. All these assets play an important role in the social and economic development of the country. **1**
- (v) **Self-sufficiency and self-reliant areas :** The creation of these durable assets protects the poverty-trodden areas from natural calamities such as foods and droughts, thereby facilitating these areas to be self-sufficiency and self-reliant. **1**
- (vi) **Impart and enhance skills :** Most of the employment generation programmes help in human capital formation by enhancing knowledge and imparting skills to the unskilled labourers. Such skills increase the employment prospects of the unskilled labourers in the industrial and the service sectors. This not only enhances income earning capacities of these people but also alleviates poverty simultaneously. **1**

24. Criticism of Economic Reforms : Critics have raised a series of criticism against the New Economic Reforms, introduced in India since mid-1991, in the following manner :

1. **Neglect of Agriculture :** The new economic policy has neglected the agricultural sector as compared to industry, trade and services sector.
 - (i) Public investment in agriculture sector, especially in infrastructure, which includes irrigation, power, roads, market linkages and research and extension (which played a crucial role in the Green Revolution), has been reduced in the reform period.
 - (ii) Removal of fertilizer subsidy increased the cost of production, which adversely affected the small and marginal farmers.
 - (iii) After the commencement of WTO, a number of policy changes were made : (a) *Reduction in import duties on agricultural products;* (b) *Removal of minimum support price;* and (c) *Lifting of quantitative restrictions on agricultural products.* All these policies adversely affected the Indian farmers as they now have to face increased international competition.
 - (iv) Due to Export-oriented policy strategies in agriculture, the production shifted from food grains to cash crops for the export market. It led to rise in the prices of food grains.
 2. **Growing Unemployment :** Another criticism raised against economic reforms is in terms of unemployment arising out of large scale retrenchment of workers. In the public sector, on the plea of overstaffing and redundancy, and in the private sector, on the plea of modernisation and technological upgradation, workers are gradually being retrenched or forced to accept voluntary retirement scheme.
 3. **Low level of Industrial Growth :** Industrial growth recorded a slowdown due to the following reasons :
 - (i) **Cheaper Imported Goods :** Due to globalisation, there was a greater flow of goods and capital from developed countries and as a result, domestic industries were exposed to imported goods. Cheaper imports replaced the demand for domestic goods and domestic manufacturers started facing competition from imports. For example, cheaper Chinese goods poses a big threat to Indian manufacturers.
 - (ii) **Lack of Infrastructure Facilities :** The infrastructure facilities, including power supply, have remained inadequate due to lack of investment.
 - (iii) **Non-Tariff Barriers by Developed countries :** All quota restrictions on exports of textiles and clothing have been removed from India. But some developed countries, like USA have not removed their quota restrictions on import of textiles from India.
 4. **Ineffective Disinvestment Policy :** Under the disinvestment policy, there has been a substantial loss to the government as assets of the public sector undertakings have been undervalued and sold to the private sector. Moreover, the proceeds from disinvestment were used to compensate the shortage of government revenues rather than using it for the development of PSUs and building social infrastructure in the country.
 5. **Ineffective Tax Policy :** The tax reduction in the reform period was done to generate larger revenue and to curb tax evasion. But, it did not result in increase in tax revenue for the government. Tariff reduction decreased the scope for raising revenue through customs duties. Tax incentives provided to foreign investors to attract foreign investment further reduced the scope for raising tax revenues.
 6. **Spread of Consumerism :** The new policy has been encouraging a dangerous trend of consumerism by encouraging the production of luxuries and items of superior consumption.
 7. **Unbalanced Growth :** Growth has been concentrated only in some select areas in the services sector, such as telecommunication, information technology, finance, entertainment, travel and hospitality services, real estate and trade, rather than vital sectors, such as agriculture and industry, which provide livelihood to millions of people in the country. 1 × 6 [Any six]
25. The non-farm areas of employment are essential with a view to raise income and exploring alternative avenues of sustainable livelihood besides agriculture. The following are the importance of non-farm employment opportunities in promoting rural diversification :
- (i) A substantial portion of Indian farming is dependent on the vagaries of monsoon making it a risky affair to rely upon solely. Hence, non-farm employment opportunities are to be explored to enable the farmers to earn from alternative non-farm occupations. This will lessen the excess burden on agriculture by reducing disguised unemployment.
 - (ii) The Kharif season opens up ample opportunities for agricultural employment. However, due to lack of irrigation facilities, the farmers fail to get gainful employment opportunities during the

Rabi season. Therefore, absence of opportunities in agricultural sector should be compensated in non-farm sectors. 1

- (iii) Agriculture being overcrowded cannot further generate employment opportunities to the farmers. Therefore, the prospects of the non-farm sectors should be opened up in the rural areas to provide job opportunities, thereby, diverting workforce from the already crowded agricultural sector. 1
- (iv) The non-farming sector has several segments that have dynamic linkages. Such linkages enhance the healthy growth of the rural areas. 1
- (v) The non-farm sector provides employment opportunities for the whole year as compared to the farming occupation. So, it helps to eradicate poverty from the rural areas. 1
- (vi) Most of the output of non-farm sectors acts as input for the large scale industries. For example, agro processing industries, food processing industries, leather industry, tourism, etc. This has two-fold benefits. First, the large scale industries can specialize in their final output by relying on the processed inputs from the non-farm sectors. Secondly, such dependence of the large scale industries provides impetus to the non-farm sectors reducing the urban-rural regional disparities. 1

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