

ASHANK DESAI CENTRE FOR POLICY STUDIES, IIT BOMBAY

PHD Entrance Test Paper 2023

Part – 1: Analytical Skills and LOGIC

Q1. SEWA Party has raised 80% of the donation that it needed for a new building by receiving an average donation of Rs 400 per person from a group of people. To raise the remaining amount, the organization now intends approaching another group of people which has two-thirds the number of people as the first group. What should be the average donation per person from the new group?

- A. 200
- B. 150
- C. 300
- D. Data not sufficient

Q. Please read note below and answer the questions 2 to 4.

The population of a city A in 2012, consisted of 45% men, 35% women and the remaining children. Of the children, 40% were female and 60% male. Of the adult men, 10% were over the age of 60 years and 25% below the age of 40 years. Of the adult women, 20% were over the age of 60 years and an equal number were under 40 years of age. The number of adult men increased by 4% in 2013 and that of adult women increased by 6%. The population of the town in 2012 was 200,000.

Q2. What is the number of adult men in 2013?

- A. 90,000
- B. 92,000
- C. 93,600
- D. 94,200

Q3. What was the number of adults above the age of 60 years in 2012?

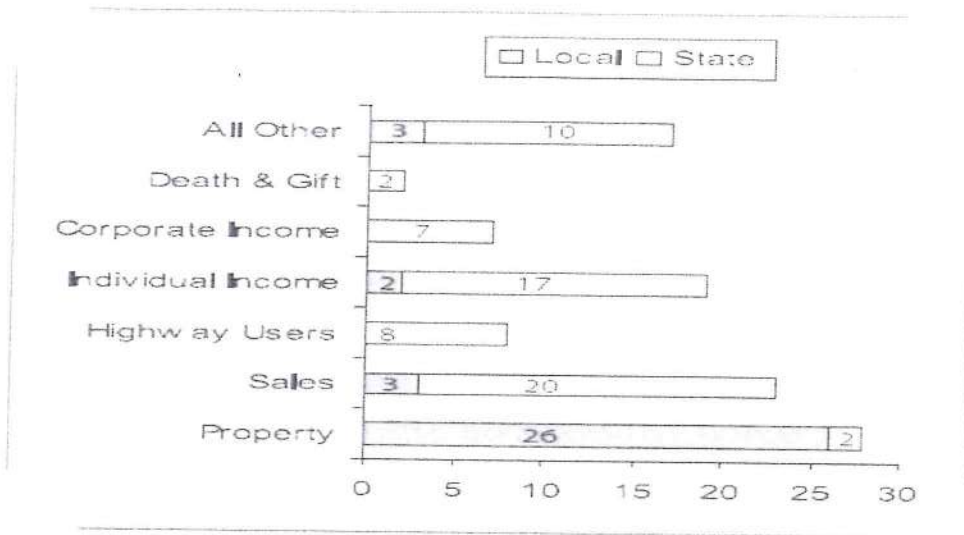
- A. 23,000
- B. 20,000
- C. 14,000
- D. Cannot be determined from the given data

Q4. What percentage of the population in 2013 consisted of children?

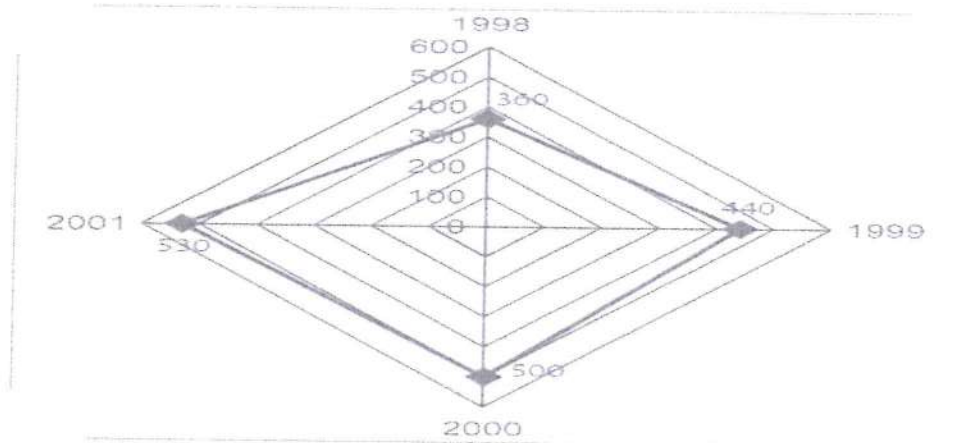
- A. 16%
- B. 20%
- C. 13%
- D. Cannot be determined from the given data

Q. Please read note and view the figures below and answer the questions 5 to 8.

Chart given below presents the sources of local and state tax revenues for the year 2001 as a percentage of the total tax revenues.



The diagram shown below represents the combined state and local tax revenue (in \$ mn).



Q5. Find the difference between the tax revenue generated from individual income at local and state levels in 2001.

- A. \$ 72 mn
- B. \$ 78.75 mn
- C. \$ 86.25 mn
- D. \$ 97.25 mn

Q6. What is the total tax revenue generated by the state in 1999?

- A. \$ 149.6 mn
- B. \$ 210.3 mn
- C. \$ 290.4 mn
- D. Cannot be determined

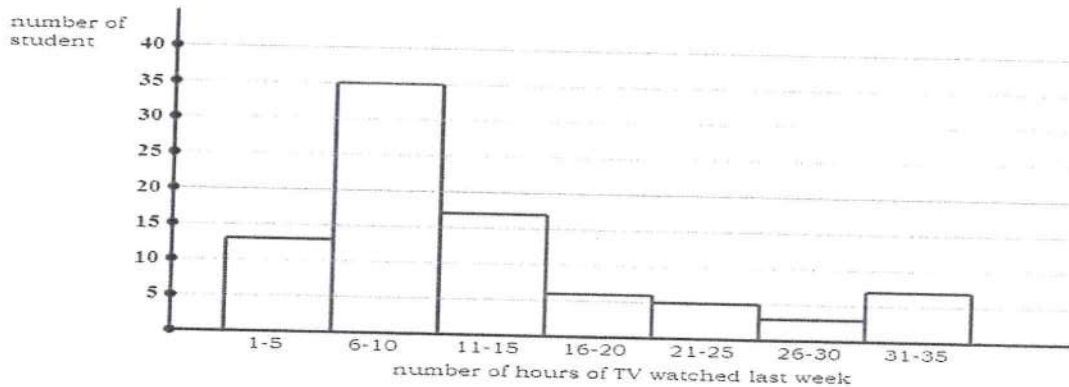
Q7. If revenue distribution in 2000 was same as in 2001 and tax from highway users was collected for the first time, then what was the percentage increase in tax revenue from source other than highway users in 2000 over the previous year?

- A. 4.5%
- B. 7.3%
- C. 9.09%
- D. 14.28%

Q8. What percentage of the total local tax revenue is generated from property tax in 2001?

- A. 52.4%
- B. 76.4%
- C. 86.1%
- D. 90.9%

Q9. In a survey, 86 high school students were randomly selected and asked how many hours of television they had watched in the previous week. The histogram below displays their answers.



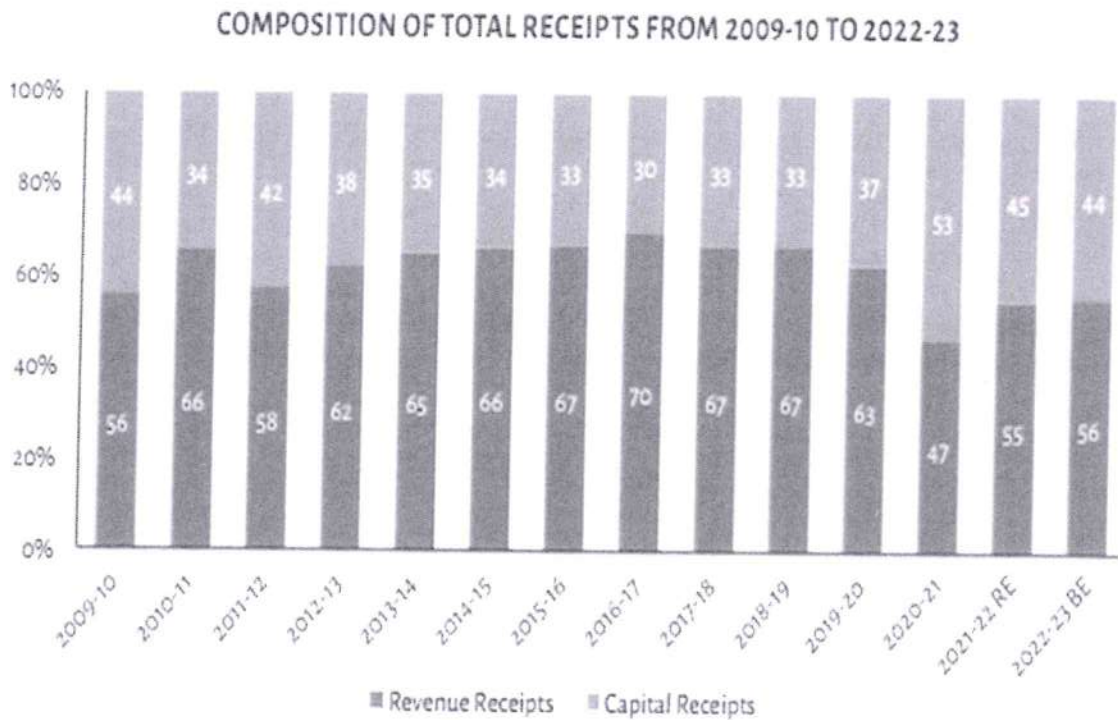
- A. Mean is larger than Median
- B. Median is larger than Mean
- C. Mean is equal to Median
- D. Cannot be determined from the information given

Q10. Yash scored 40 marks in a test, getting 3 marks for each right answer and losing 1 mark for each wrong answer. Had 4 marks been awarded for each correct answer and 2 marks been deducted for each incorrect answer, then Yash would have scored 50 marks. How many questions were there in the test?

- A. 20
- B. 22
- C. 21
- D. None of the above

Q. Please read the note and view the figure below and answer the questions 11 to 13.

In FY 2009-10, Gol's Total Receipts (after devolution of taxes to states) stood at 10.24 lakh crores. This increased to 35.10 lakh crores in FY 2020-21. For the current fiscal year, i.e., FY 2022-23, a further increase to 39.45 lakh crores was budgeted in the Budget Estimates (BEs). Out of Total Receipts, Revenue Receipts have nearly quadrupled in the last 15 years.



Q11. Between 2009-10 and 2022-23, Gol's revenue receipts that are earned through taxes and non-tax sources are estimated to have:

- A. Increased from 10.24 lakh crore to 35.10 lakh crores
- B. Increased from 5.7 lakh crore to 22 lakh crores
- C. Not changed
- D. Decreased from 56 lakh crore to 44 lakh crores

Q12. If GoI's Capital Receipts were 10 lakh crores in 2019-20, how much did it change after the covid-19 pandemic in 2020-2021?

- A. Increased by 16 lakh crores
- B. Decreased by 16 lakh crores
- C. Increased by 9 lakh crores
- D. Increased by 4 lakh crores

Q13. Between 2009-10 and 2022-23, GoI got the highest amount of revenue receipts in the year:

- A. 2022-23
- B. 2017-18
- C. 2009-10
- D. Not enough information

Essay Question:

After reading Parenteau et al (2022) *Reduce Inequality to Bolster Societal Resilience: Lessons From the COVID-19 Pandemic* write in your own words (*no more than 1000 words – provide a word count*), the effects of inequality and homelessness on social resilience in India. Use examples from your personal experiences and observations during the pandemic.

[The response must be written in the answer script provided].

Reduce Inequality to Bolster Societal Resilience: Lessons From the COVID-19 Pandemic

By Anna M. Parenteau, Chase J. Boyer, Lillian J. Campos, Angelica F. Carranza, LillyBelle K. Deer, Ph.D., Dana T. Hartman, Julie T. Bidwell, Ph.D., R.N., and Camelia E. Hostinar, Ph.D., University of California, Davis

Key Facts

The increase in the prevalence and severity of mental health problems during the COVID-19 pandemic was stratified based on socioeconomic status.

Those problems increased and intensified most dramatically among people who were low-income or experiencing homelessness.

Reducing social and economic inequality would promote population mental health and societal resilience to future crises.

Social and economic inequality are chronic stressors that continually erode the mental and physical health of marginalized groups, undermining overall societal resilience. In a recent review, we synthesized evidence of greater increases in mental health symptoms during the COVID-19 pandemic among socially or economically marginalized groups in the United States, including people who are low-income or experiencing homelessness.¹ Based on our findings, we propose that reducing social and economic inequality would promote population mental health and societal resilience to future crises. Specifically, we propose interventions to bolster societal resilience by enhancing economic safety and equity.

The COVID-19 pandemic brought about an overall increase in the prevalence of mental health problems. These problems were, however, stratified based on socioeconomic status (SES). For example, higher levels of depression symptoms affected those who had lower income, less than \$5,000 in savings, and who experienced more stressors.² A different study found that participants whose income fell below the federal poverty level had 4.58 times higher odds of developing significant distress during the pandemic compared to those above the poverty level.³ Another noted that food insufficiency was associated with worse mental health during the pandemic, particularly symptoms of anxiety and depression.⁴

COVID-19 visited particular vulnerability upon people experiencing homelessness or unstable housing. This group suffered higher rates of infection and illness than the general population, and exhibited high rates of comorbidity with psychiatric illness and substance use.⁵ Particularly affected were adolescent and young-adult substance users who were homeless, with one study estimating that 16%-28% reported increased use of alcohol, tobacco, and marijuana after the onset of the pandemic.⁶ With shelter in place mandates and economic instability limiting residential mobility during the pandemic's first

year, incidences of intimate partner violence increased, and victims were placed at a greater risk for experiencing homelessness.⁷

Explaining COVID's disproportionate effects

Although the COVID-19 pandemic is unique in the severity of its health, social, and economic disruptions, its disproportionate impact on lower-SES groups was largely predictable on three bases. Firstly, high SES provided greater protection against wage losses and more opportunities for remote work, as well as greater flexibility to avoid public transportation and crowding.⁸ In turn, this flexibility protected higher SES people against escalating mental health problems.

Secondly, social and economic inequality function as chronic stressors that activate stress-response systems, eroding the mental and physical health of socially and economically marginalized groups. These groups can be expected to experience exacerbated neurobiological stress responses during new crises like the pandemic.

Thirdly, for low-income groups, mental-health deterioration and higher rates of COVID-19 morbidity and mortality were inextricably linked to pre-existing chronic diseases known to be more prevalent among socially and

¹ Parenteau, A. M., Boyer, C. J., Campos, L. J., Carranza, A. F., Deer, L. K., Hartman, D. T., Bidwell, J. T., & Hostinar, C. E. (2022). A review of mental health disparities during COVID-19: Evidence, mechanisms, and policy recommendations for promoting societal resilience. *Development and Psychopathology*, 1-22. <https://doi.org/10.1017/S0954579422000499>

² Ettman, C. K., Abdalla, S. M., Cohen, G. H., Sampson, L., Vivier, P. M., & Galea, S. (2020). Prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. *JAMA Network Open*, 3(9), e2019686. doi: 10.1001/jamanetworkopen.2020.19686.

³ Riehm, K. E., Holiugue, C., Smail, E. J., Kapteyn, A., Bennett, D., Thurl, J., Kreuter, F., McGinty, E. E., Kalb, L. G., Veldhuis, C. B., Johnson, R. M., Fallin, M. D., & Stuart, E. A. (2021). Trajectories of Mental Distress Among U.S. Adults During the COVID-19 Pandemic. *Annals of Behavioral Medicine*, 55(2), 93-102. <https://doi.org/10.1093/abm/kaaa126>

⁴ Nagata, J. M., Ganson, K. T., Whittle, H. J., Chu, J., Harris, O. O., Tsai, A. C., & Weiser, S. D. (2021). Food insufficiency and mental health in the U.S. during the COVID-19 pandemic. *American Journal of Preventative Medicine*, S0749-3797(21)00012-X. doi: 10.1016/j.amepre.2020.12.004. Epub ahead of print.

⁵ Fuchs, J. D., Carter, H. C., Evans, J., Graham-Squire, D., Imbert, E., Bloome, J., & Kanzaria, H. K. (2021). Assessment of a hotel-based COVID-19 isolation and quarantine strategy for persons experiencing homelessness. *JAMA Network Open*, 4(3), e210490. doi: 10.1001/jamanetworkopen.2021.0490.

⁶ Tucker, J. S., D'Amico, E. J., Pedersen, E. R., Garvey, R., Rodriguez, A., & Klein, D. J. (2020). Behavioral health and service usage during the COVID-19 pandemic among emerging adults currently or recently experiencing homelessness. *Journal of Adolescent Health*, 67(4), 603-605. doi: 10.1016/j.jadohealth.2020.07.013.

⁷ Goodsmith, N., Ijadi-Maghsoodi, R., Melendez, R. M., & Dossett, E. C. (2021). Addressing the urgent housing needs of vulnerable women in the era of COVID-19: The Los Angeles county experience. *Psychiatric Services*, 72(3), 349-352. doi: 10.1176/appi.ps.202000318.

⁸ Brough, R., Freedman, M., & Phillips, D. C. (2021). Understanding socioeconomic disparities in travel behavior during the COVID-19 pandemic. *Journal of Regional Science*, 10.1111/jors.12527. Advance online publication. <https://doi.org/10.1111/jors.12527>

Haushofer, J., Ringdal, C., Shapiro, J. P., & Wang, X. Y. (2019). Income changes and intimate partner violence: Evidence from unconditional cash transfers in Kenya [Working paper]. National Bureau of Economic Research. <https://www.nber.org/papers/w25627>

⁹ Shaefer, H. L., Collyer, S., Duncan, G., Edin, K., Garfinkel, I., Harris, D., ... & Yoshikawa, H. (2018). A universal child allowance: A plan to reduce poverty and income instability among children in the United States. *The Russell Sage Foundation Journal of the Social Sciences*, 4(2), 22-42. <https://doi.org/10.7758/RSF.2018.4.2.02>

¹⁰ Wise, P. H., & Chamberlain, L. J. (2022). Adversity and Opportunity: The pandemic's paradoxical effect on child health and well-being. *JAMA Pediatrics*. doi:10.1001/jamapediatrics.2022.0063

¹¹ Leventhal, T., & Brooks-Gunn, J. (2003). Moving to opportunity: An experimental study of neighborhood effects on mental health. *American Journal of Public Health*, 93(9), 1576-1582. <https://doi.org/10.2105/aph.93.9.1576>

¹² Laster Pirtle, W. N., & Wright, T. (2021). Structural Gendered Racism Revealed in Pandemic Times: Intersectional Approaches to Understanding Race and Gender Health Inequities in COVID-19. *Gender & Society*, 35(2), 168-179. <https://doi.org/10.1177/08912432211001302>

Understanding poverty, shaping the future of poverty research

economically marginalized groups, such as cardiovascular, metabolic, and immune conditions. Thus, as the pandemic has shown, social inequality can create a worsening spiral of mutually reinforcing mental and physical health problems.

Bolstering economic safety and equity

With the brunt of the COVID-19 pandemic having been experienced by lower-resourced communities, economic safety and equity should be prime targets for promoting population mental health and societal resilience. To promote such resilience to future calamities, existing economic “safety net” policies require expansion, and new policies need consideration and examination. These include cash transfer and income supplement programs, broader food assistance programs, and more support for housing and residential mobility.

above the poverty line.¹² Community investments and residential mobility opportunities can be offered in tandem to improve communities for those who wish to remain and provide flexibility for individuals and families seeking new communities. These poverty reduction measures may promote resiliency among higher-level systems, allowing lower-level systems to adapt to stress.

Expand the safety net to increase resilience

Individuals who are marginalized along multiple dimensions of their identity (e.g., being a low-income woman, or an LGBTQ adolescent with a prior history of multiple childhood adversities) have experienced a more negative impact of the pandemic on their mental health. This is because multiple forms of inequality interact and intersect to shape an individual’s experience and health in

“Expanding economic “safety net” policies that promote economic safety and equity will create greater resilience among communities and families before a disaster occurs, allowing a more robust and adaptive response.”

Proportion Depressed Before and During the COVID-19 Pandemic



Sustained cash transfer programs piloted in other nations have been shown to reduce stress, prevent family violence, and increase long-term living standards.⁹ A monthly child allowance has been projected to completely eliminate severe child poverty in the United States, potentially disrupting intergenerational cycles of poverty.¹⁰ The Child Tax Credit is an example of a policy that has been effective at reducing the rate of child and family poverty to historic lows.¹¹ Cash transfers and child allowances have also shown more efficacy in reducing food insecurity in Canada than the Supplemental Nutrition Assistance Program (SNAP) in the United States, a program tied to income and limited in eligibility terms.

Additionally, housing unaffordability remains a structural barrier to disaster resilience. Providing permanent housing to the unhoused has become urgent during the COVID-19 pandemic and has increased popularity for innovative policies that successfully address housing insecurity. For people living in high-poverty neighborhoods, residential mobility programs such as Moving to Opportunity have shown reductions in personal distress and improved wellbeing 15 years later. Among individuals from high-poverty neighborhoods, one standard deviation reduction in neighborhood poverty reduced stress to levels equivalent to those of individuals

unique ways according to their social identity.

For instance, women with lower socioeconomic status and marginalized racial or ethnic identities experienced greater disadvantage during the COVID-19 pandemic and were overburdened in ways that impacted their well-being and mental health.¹³ The compounding effects of these multiple identities suggest the need to allocate additional resources and interventions for those who experience multiple forms of social or economic disadvantage. Expanding economic “safety net” policies that promote economic safety and equity will create greater resilience among communities and families before a disaster occurs, allowing a more robust and adaptive response.

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About the Center

The UC Davis Center for Poverty & Inequality Research mission is to facilitate non-partisan academic research on poverty and economic inequality in the U.S., to disseminate this research, and to train the next generation of poverty scholars. Our research agenda spans four themed areas of focus:

- Labor Markets and Poverty
- Children and the Intergenerational Transmission of Poverty
- The Non-traditional Safety Net, focusing on health and education
- The Relationship Between Poverty and Immigration

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