**IBDP ECONOMICS PAPER 3 DATA BOOKLET**

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| **1** | Linear Demand Function: Qd = a –bP |
| **2** | Linear Supply Function: Qs = c – dP |
| **3** | Equilibrium: Qd = Qs; a –bP = c – dP |
| **4** | $PED=\frac{\% ΔQD}{\%ΔP}$ = $\frac{Q2-Q1}{Q1} $/ = $\frac{P2-P1}{P1} $x 100  |
| **6** | $XED=\frac{\% ΔQDA}{\%ΔPB}$ = $\frac{Q2A-Q1A}{Q1A} $/ = $\frac{P2B-P1B}{P1B} $x 100;   XED<1 = Positive sign tells us that goods are Complementary XED>1 =Negative sign tells us that goods Substitutes |
| **8** | $YED=\frac{\% ΔQD}{\%ΔP}$ = $\frac{Q2-Q1}{Q1} $/ = $\frac{Y2-Y1}{Y1} $x 100 ;  YED >1 = Normal goods ; right ward shift of demand curve YED <1 = Necessities or inferior goods; leftward shift of demand curve |
| **11** | $PES=\frac{\% ΔQS}{\%ΔP}$ = $\frac{Q2-Q1}{Q1} $/ = $\frac{P2-P1}{P1} $x 100 |
| **13** | **Tax**:Qs = c – d(P-t) **Consumers Surplus:**Revenue before tax = $\frac{maximum price- Pe}{2} $ x QeRevenue after tax = $\frac{maximum price-Pc x Pt}{2}$ Consumption expenditure = P X Q**Producers Surplus:**Revenue before tax = $\frac{Pc-2 }{2} $ x QeRevenue after tax = $\frac{Pp -2 x Qt}{2}$ Producers Revenue = P X QWelfare Loss = $\frac{(Pc –Pp) x (Qe-Qt)}{2}$ Tax incidence on consumers = Pc – Pe x QtTax incidence on Producers = Pe – Pp x QtPED <1 = Consumers Pay, PED > 1 = Producers PayPES >1 = Consumers pay , PES >1 = Producers Pay |
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|  | **Subsidies**: c – d(P+ Sb) **Consumers Surplus:**Revenue before Subsidy = $\frac{maximum price- Pe}{2} $ x QeRevenue after Subsidy = $\frac{maximum price-Pc x Qsub}{2}$ Consumption expenditure = P X Q**Producers Surplus:**Revenue before Subsidy = $\frac{Pe-minimum price 2 }{2} $ x QeRevenue after Subsidy = $\frac{Pp -minimum price x Qsub}{2}$ Producers Revenue = P X QTotal Social Benefit = $\frac{(Pp –Pc) x (Qsub-Qe)}{2}$   |
| **14** | **Price Ceiling**  **E**xcess demand = Shortage = Qd –QsChange in consumption expenditure = ΔCE = Pe x Qe – Pc x QsChange in Producers Revenue = ΔPR = ΔCE |
| **15** | **Price Floor**Excess Supply = Surplus = Qs - Qd Change in consumption expenditure = ΔCE = Pe x Qe before price floor = P1 x Qs after price floorChange in Producers Revenue = ΔPR = ΔCEGovernment expenditure Pf x (Qs – Qd)Government expenditure = Total producers revenue – total consumption expenditureExcess supply of Labour = Qd < Qe |
| **17**  | $AP=\frac{TP}{Q}$ $MP=\frac{ΔTP}{ΔQ}$  |
| **19** | TC = TFC + TVC $ATC=\frac{TC}{Q}$ $AFC=\frac{TFC}{Q}$ $AVC=\frac{TVC}{Q}$  $MC=\frac{ΔTC}{ΔQ}$ |
| **20** | TR = P x Q $AR=\frac{TR}{Q}$ $MR=\frac{ΔTR}{ΔQ}$ |
| **21** | Profit = TR – TC ; TR > TC = Supernormal profit; TR<TC = Loss; TR = TC = Break – even point  |
| **22** | MC = AVC = Shut-down price |
| **23** | Revenue maximisation TR maximum = MR = 0 |
| **25** | *GDP = C+I+G+X-M GDP per-capita* $=\frac{GDP}{Population}$*NDP = GDP – depreciation**Green GDP = GDP – the value of environment degradation**GNI or GNP = GDP + Income earned from abroad – income sent abroad* *GNI = GDP + Net Income from abroad**GDP deflator =* $\frac{nominal GDP}{real GDP }$ *x 100**Real GDP =* $\frac{nominal GDP}{Price deflator}$ *x 100* |
| **26** | *Income method, expenditure method, output method**Injections (J) = C + I + G + X ;*  *Withdrawals (W) or Leakages (L) = C + S + T + M*  |
| **27** | $K=\frac{1}{1-MPC}$ = $\frac{1}{MPS}$ = $\frac{1}{MPS+MPT+MPM}$K = $\frac{Δ in real GDP}{initial Δ in expenditure }$ |
| **28** | Unemployment Rate = $UR=\frac{number unemployed}{Total Labour Force }$ x 100 |
| **29** | Real national Income $NY=\frac{nominal income}{CPI}$ x 100Rate of inflation = $R of Infl=\frac{value of basket of goods in specific year}{value of same basket in base year}$ x 100 $CPI=\frac{Y2-Y1}{Y1}$ x 100 |
| **30** |  Weighted price index$=\frac{price index of current year}{base year index}$ x 100 = rate of inflation |
|  |  % change in real GDP $=\frac{final value -initial value }{initial value}$ x 100% change in real GDP per capita $=\frac{\% Δ in real GDP }{\%Δin Population}$ x 100 |
| **32** | Average rate of tax $=\frac{tax }{YG}$ $=\frac{level of income }{individuals gross income}$ Marginal rate of tax $=\frac{Δtax }{ΔYG}$ $=\frac{change in tax }{change in gross income}$  |
| **33** | Opportunity Cost $=\frac{Output Y }{Output X}$ $=\frac{Output X }{Output Y}$  |
| **34** | **Tariffs** Domestic supply = Pworld x 0 – Q1Greater revenue = Pw + tariff x 0 – Q3 Increase in production = a+b+C+g+hForeign production before tariff (imports M) = Q1 – Q2  Revenue = h +I + j + k  Domestic production after tariff QD falls – M imports fall Q3 –Q4 Import revenue M = d + e Consumers pay higher prices Pw + tariff, demand falls = 0 – Q2 to 0 – Q 4 |
|  | **Quotas** Domestic producers after Quota earn = a+f Foreign producers revenue = b + g + h Foreign producers before quota = b + c + d + e Consumers pay lower price Pw and buy 0 – Q2 Government dead weight loss = j + k Loss of consumers surplus = k |
|  | **Subsidy** Domestic producers earn = a Foreign producers earn = b + c + d Subsidy increases supply 0 – Q3 Foreign supply decreases Q3 – Q2 After subsidy Domestic revenue = a + b + e + f + g Foreign revenue = c + d Government expenditure = e + f +g Domestic production = Q1 – Q3 Inefficiency = g = resources misallocated  |
| **35** | **Exchange Rate of foreign currency**  $=\frac{forex price of good }{domestic price of good }$ |
| **37** | Current account + Capital account + financial account + change in forex assets = 0Current account – (capital account + financial account + Δ in reserves |
| **38** | **Terms of Trade** Total export revenue = average Px X QxTotal Import expenditure = average Pm X Qm $PEDx=\frac{\% ΔQD}{\% Δ average price of imports}$ $PED=\frac{\% ΔQx}{\% Δ avg Px}$ $PEDx=\frac{\% ΔQD}{\% Δ average price of exports }$ $PED=\frac{\% ΔQm}{\% Δ avg Pm}$ |