

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

- 1) Consider figure 2.98 in the textbook. Given a wage increase from  $W_0$  to  $W_1$ , the distance between  $I'$  and  $I_1$  represents:
- A) The equilibrium choice for leisure
  - B) The income effect
  - C) The equilibrium choice for hours worked
  - D) The substitution effect
  - E) The net effect of both the substitution effect and the income effect

Answer: B

- 2) Empirical literature on labour supply patterns for married women tends to find all of the following, except:
- A) The higher the husband's income, the higher the labour force participation rate.
  - B) Women with children have lower rates of labour force participation.
  - C) The higher the education level, the higher the labour force participation rate.
  - D) Labour market participation rate for married women was highest in the 35-44 age group.
  - E) Participation rate for all women is around 76 percent.

Answer: A

- 3) Which of the following statements concerning the elasticity of labour supply is false?
- A) The overall labour supply for both sexes is likely to be downward sloping.
  - B) The overall labour supply for both sexes is likely to be upward sloping
  - C) It is generally higher for women than for men.
  - D) The elasticity of labour supply with respect to income is negative.
  - E) The compensated elasticity (reflecting the substitution effect) tends to be higher in magnitude than the uncompensated, gross elasticity.

Answer: A

- 4) Which of the following statements is false?
- A) In periods of low unemployment, discouraged workers tend to re-enter the labour force.
  - B) Discouraged workers contribute to the phenomenon of hidden unemployment.
  - C) In periods of high unemployment, discouraged workers tend to withdraw from the labour force.
  - D) In periods of high unemployment, added workers may increase labour market participation rate.
  - E) In periods of high unemployment, added workers (particularly married women) tend to enter the labour force.

Answer: D

- 5) Suppose a worker is observed to be working but is forced to work fewer hours than she really wants to work. Which of the following statements is true?
- A) She is on an indifference curve which is higher than the one which is tangent to the budget line.
  - B) She is on an indifference curve which is lower than the one which is tangent to the budget line.
  - C) The indifference curve that she is on is tangent to the budget line.
  - D) She is on an indifference curve which is lower than the one which passes through the point on the budget line corresponding to zero hours of work.
  - E) She is not on an indifference curve.

Answer: B

- 6) The slope of the indifference curve at the lower left-hand corner of the income/leisure diagram, where zero hours are supplied to the labour market, is equal to:
- A) the slope of the budget constraint.
  - B) the reservation wage.
  - C) the difference between the market wage and the reservation wage
  - D) the prevailing market wage.
  - E) the level of non-market income.

Answer: B

- 7) The reservation wage is defined as:
- A) the wage rate at which zero hours of labour is supplied by the workers.
  - B) the equilibrium wage.
  - C) the wage of the reservation clerk in the tourism industry.
  - D) the minimum wage that an employee is willing to accept for a given job.
  - E) the maximum wage that an employer is willing to pay a worker for a given job.

Answer: D

- 8) All of the following patterns of labour market behaviour can be analyzed with the income-leisure framework, except:
- A) worksharing
  - B) underemployment
  - C) moonlighting
  - D) overtime work
  - E) labour force participation

Answer: A

- 9) Consider the situation of a worker who is 'at the corner equilibrium' i.e., he or she is supplying zero hours of work and consuming 16 hours of leisure. In context of the income-leisure framework, which of the following statements is false?
- A) The marginal rate of substitution is greater than the wage rate in absolute value terms.
  - B) The rate at which the worker is willing to exchange income for leisure is not equal to the market rate for the exchange of income for leisure.
  - C) Marginally, the worker values an hour of leisure more than she values an hour's worth of income.
  - D) The indifference curve is flatter than the budget line.
  - E) The indifference curve is steeper than the budget line.

Answer: D

- 10) Which one of the following regarding to an individual's budget constraint is correct?
- A) The level of non-labour income is higher for a part-time worker than for a full-time worker
  - B) The slope of the budget constraint is determined by the market wage rate.
  - C) The slope of the budget constraint is higher for a full-time worker than for a part-time worker.
  - D) The slope of the budget constraint is determined by the reservation wage rate
  - E) The level of non-labour income determines the intercept of the budget constraint.

Answer: B

- 11) In the neo-classical model of labour supply, which of the following is always true?
- A) The substitution effect causes the worker to work more hours if wages increase.
  - B) The income effect and the substitution effect work in the same direction.
  - C) If leisure is a normal good, a wage increase causes a decrease in hours worked.
  - D) The income effect causes the worker to work more hours if wage increase.
  - E) If leisure is a normal good, a wage increase causes an increase in hours worked.

Answer: A

- 12) Over the backward bending portion of the labour supply curve,
- A) There is no longer a trade-off between income and leisure.
  - B) Leisure becomes an inferior good.
  - C) The wage elasticity of labour supply is negative.
  - D) The substitution effect of a wage change dominates the income effect.
  - E) The wage elasticity of labour demand is inelastic.

Answer: C

- 13) For a worker who is deciding how many hours of labour to supply, all of the following are true except that:
- A) The income effect of a wage change equals the substitution effect.
  - B) The rate at which she is willing to exchange leisure for income equals the rate at which the market allows her to do it.
  - C) The marginal rate of substitution between income and leisure is equal to the wage rate.
  - D) The worker cannot increase total utility by working more or fewer hours.
  - E) The slope of the budget line equals the slope of the indifference curve.

Answer: A

- 14) Which of the following statements most closely applies to the labour force participation decision?
- A) It doesn't include unemployed workers.
  - B) It occurs when one is actively seeking work.
  - C) It includes paid and unpaid work.
  - D) It consists of the choice to allocate a portion of one's time to labour market activities as opposed to non-market activities.
  - E) It occurs when one accepts an employment position and is working.

Answer: D

- 15) The portion of the population that is surveyed as potential labour force participants consists of:
- A) the entire population of Canada.
  - B) the entire civilian population that is 15 years of age or older.
  - C) the entire population excluding the Northern territories and those living on native reserves.
  - D) the civilian non-institutional population.
  - E) the unemployed plus the employed population.

Answer: B

- 16) Which of the following statements applies to the unemployed population?
- A) They are jobless.
  - B) They are working fewer hours than they would like to.
  - C) They are working but are underpaid.
  - D) They are jobless but are actively seeking work.
  - E) They are either unable to work, or are on strike.

Answer: D

- 17) Which of the following groups of workers are considered to be part of the labour force?
- A) Full-time students
  - B) Members of the Canadian military
  - C) Discouraged workers
  - D) Homemakers
  - E) The hard-core unemployed

Answer: E

- 18) How often is the Canadian census conducted by Statistics Canada?
- A) Every two years
  - B) Every five years
  - C) Every year
  - D) There is no regular cycle for taking the census.
  - E) The census has been discontinued in favour of the Labour Force Survey.

Answer: B

- 19) Which among the following countries tends to have the lowest labour force participation rates?
- A) United States
  - B) France
  - C) Canada
  - D) United Kingdom
  - E) There is no enduring ranking, as in some years one country will have higher rates, but in other years another country's rates will surpass them.

Answer: B

- 20) The equation for the unemployment rate (UR) is:
- A)  $UR = (\text{unemployed}) / \text{labour force}$
  - B)  $UR = (\text{unemployed} / \text{population})$
  - C)  $UR = (\text{unemployed} / \text{employed})$
  - D)  $UR = (\text{employed} - \text{unemployed}) / \text{labour force}$
  - E)  $UR = (\text{employed} - \text{unemployed}) / \text{unemployed}$

Answer: A

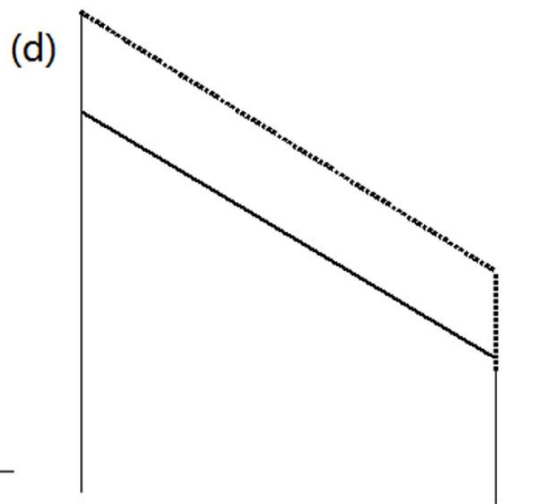
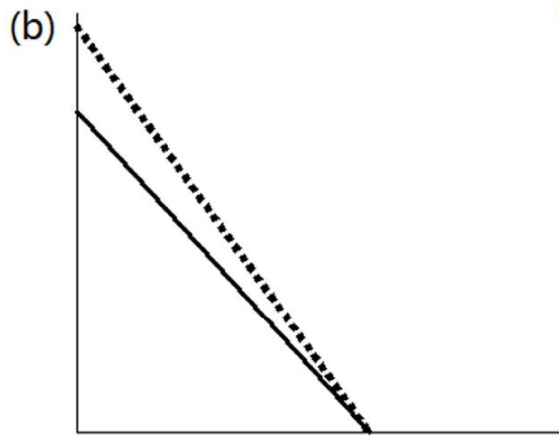
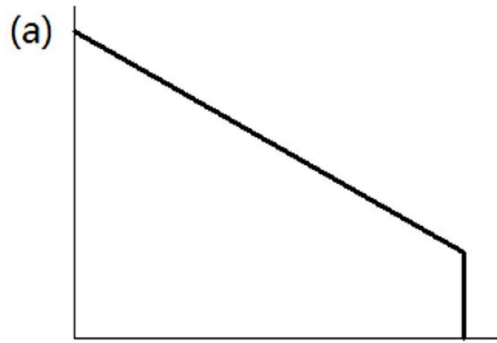
- 21) The wage rate at which the individual worker is indifferent between participating and not participating in the labour force is called the:
- A) participating wage.
  - B) utility wage.
  - C) reservation wage.
  - D) indifference wage.
  - E) minimum wage.

Answer: C

- 22) An increase in non-market income will have which of the following effects?
- A) A counter-clockwise rotation in the income constraint, making it flatter
  - B) A downward shift in the income constraint
  - C) An upward shift in the income constraint
  - D) A clockwise rotation in the income constraint, making it steeper
  - E) There is no change to the income constraint.

Answer: C

23) Which of the following diagrams corresponds to a budget line that involves overtime hours with a wage premium?



A) (a)

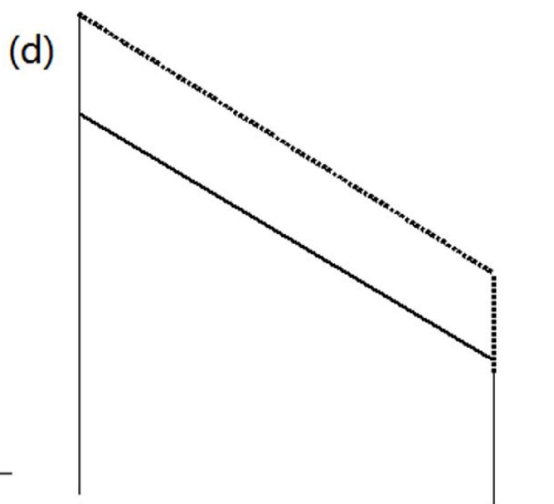
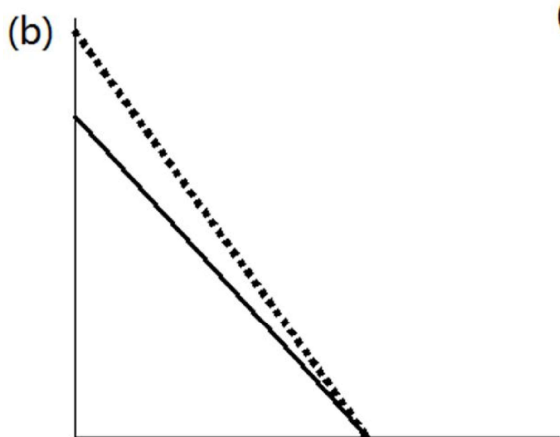
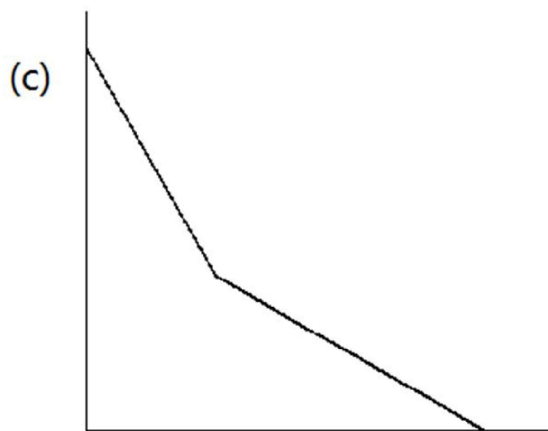
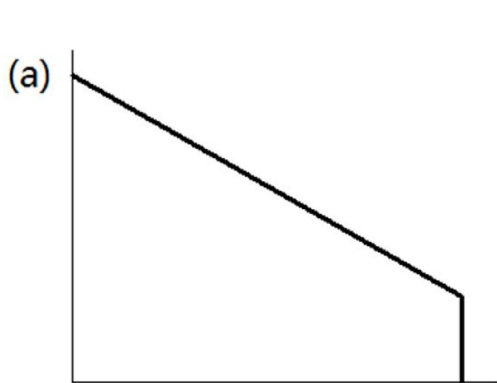
B) (b)

C) (c)

D) (d)

Answer: C

24) Which of the diagrams given below corresponds to a budget line with some nonlabour income?



A) (a)

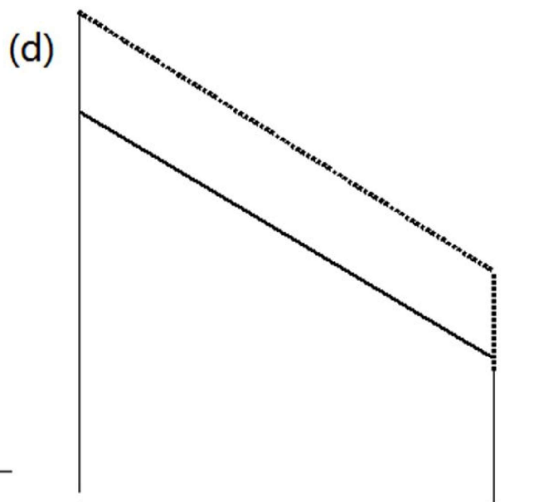
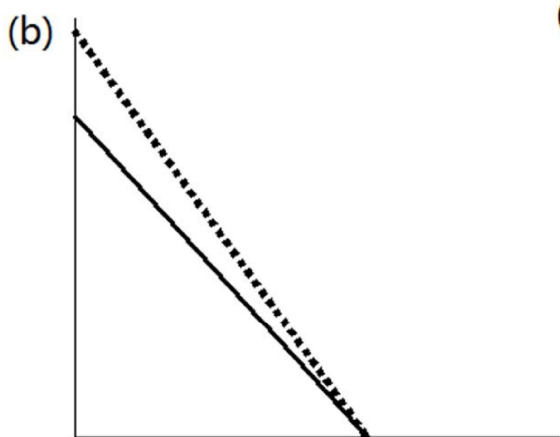
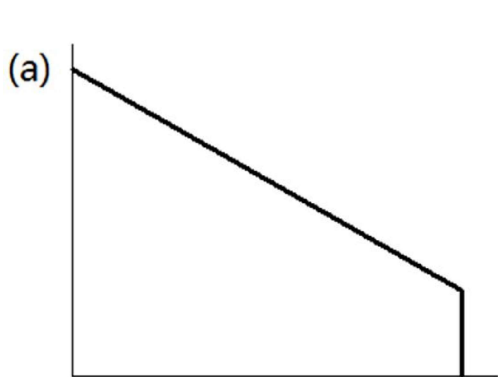
B) (b)

C) (c)

D) (d)

Answer: A

25) Which of the diagrams given below corresponds to a budget line that involves a wage increase?



A) (a)

B) (b)

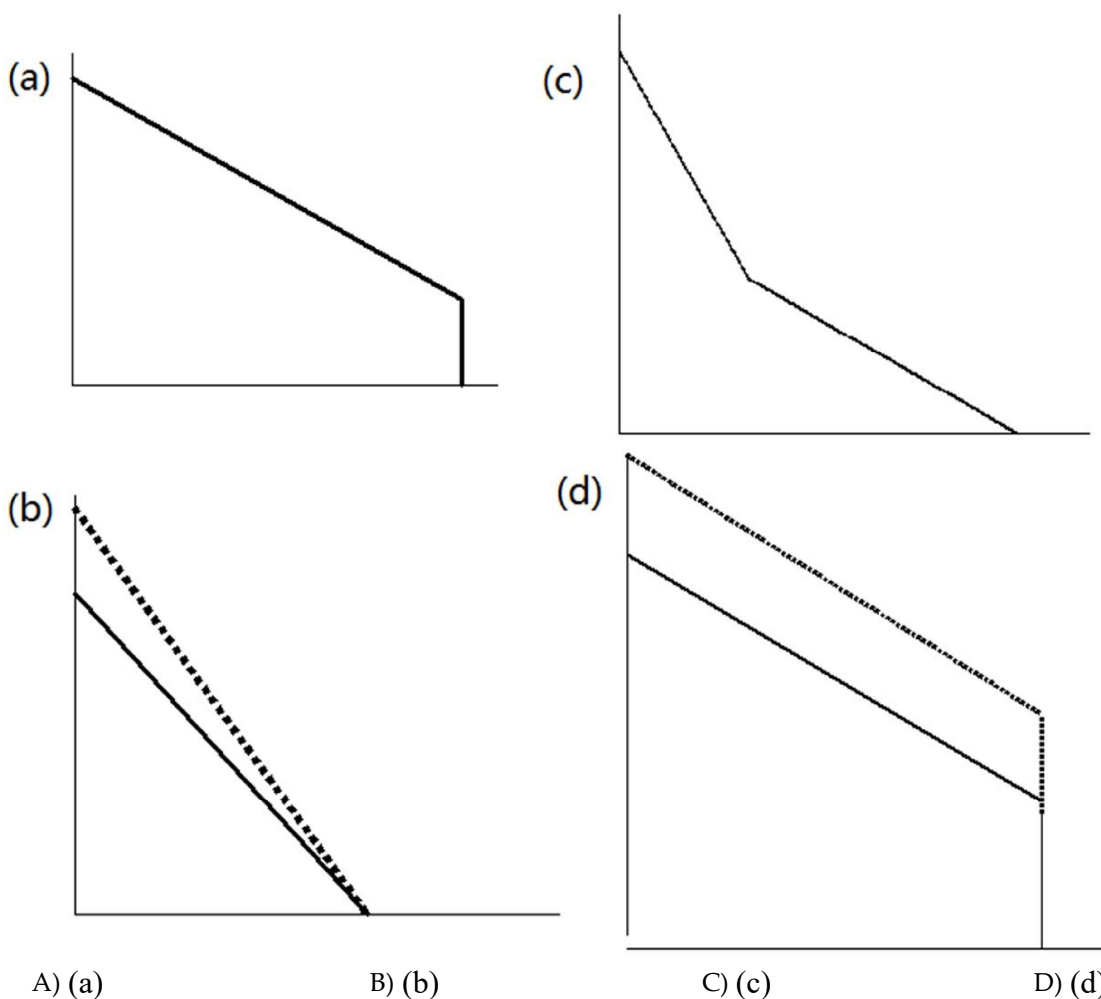
C) (c)

D) (d)

Answer: B



26) Which of the diagrams given below corresponds to a budget line that involves an increase in nonlabo income?



Answer: D

27) What is indicated by a parallel shift of the budget line?

- A) A change in the preferences
- B) The substitution effect
- C) The total effect of a price change
- D) The income effect of either a price change or an income change

Answer: D

28) Our income-leisure model suggests that moonlighting may be caused by:

- A) overemployment.
- B) overtime premium.
- C) unemployment.
- D) underemployment.

Answer: D

- 29) Our income-leisure model suggests that a worker works overtime because:
- A) He earns over-time premium, which leads to a greater income effect than substitution effect.
  - B) If he is paid the straight-time equivalent, he will work more hours than over-time hours.
  - C) He is underemployed.
  - D) He is overemployed.

Answer: D

- 30) Figure 2.5 (b) in the text explains that:
- A) If an individual has a lower valuation of leisure, then the slope of his indifference curve is steeper.
  - B) If an individual has a higher valuation of consumption, then the marginal rate of substitution of consumption over leisure is higher.
  - C) If an individual has a higher valuation of consumption, then the slope of his indifference curve is flatter.
  - D) If an individual has a lower valuation of leisure, then the marginal rate of substitution of consumption over leisure is higher.

Answer: C

**ESSAY. Write your answer in the space provided or on a separate sheet of paper.**

- 31) A major and recurring theme of this textbook is the role of empirical research in labour economics. Conceptual models exist to analyze many labour market phenomena, but often the predictions that emerge are ambiguous. It is the objective of empirical research to test the validity of these predictions, and to try to sort out the multiple effects, which may work simultaneously. Such is the case for the theory of individual labour supply. Discuss the major conceptual implications of this model as well as the results from the empirical literature which correspond to them. The key is to link the predictions, which flow from the model, to the hypotheses that have been examined in the literature. In particular, your response can follow the following outline:
- Without getting bogged down in technical details (i.e., don't give a graph), explain intuitively the preferences and constraints in determining the optimal choice of hours worked.
  - What is the impact on the choice of hours worked by an individual if the level of non-market income changes?
  - Briefly describe the income effect and the substitution effect of a wage change, and relate this to the backward bending supply curve.
  - A large number of econometric studies have estimated the shape of the labour supply curve, the wage elasticity of labour supply, and the income elasticity of labour supply. What have they found, generally speaking, regarding the slope of the supply curve? Does the slope differ between men and women?
  - Figure 2.3 in the textbook shows what appears to be a slight negative empirical relationship across countries between per capita national income and male labour force participation rates, coupled with a positive empirical relationship across countries between per capita national income and female labour force participation rates. It might be possible to interpret these observed empirical patterns in terms of substitution effects and income effects.

Answer: Suggested Answer:

The consumer choice model is used to analyze an individual's labour supply decision. Consumers' preferences are represented by the indifference curve of consumption and leisure. Consumers' constraints are given by their wage income from working hours as well as a time constraint which is a combination of working hours and leisure hours. Consumers' objective is to maximize their total utility from consumption by choosing their preferred combination of income/consumption and leisure, as represented by their opportunity set or budget constraint. If this optimum occurs at zero hours of work, the individual does not participate. If optimal hours are positive, the individual participates, and the marginal rate of substitution between leisure and consumption is equal to the wage rate.

The reservation wage is given by the marginal rate of substitution between leisure and consumption at zero hours of work, which is a critical wage in determining the participation decision. For wages above the reservation wage, the consumer will choose to work. Otherwise, the consumer will not participate.

The budget constraint of a consumer is composed of two parts: non-labour income and wage income from total working hours. Therefore the change of non-labour income and wage rate will affect the consumer's labour supply decision. If non-labour income increases, there will be a pure income effect, an individual who chooses not to participate before will remain out of participation and an individual who has positive working hours will reduce his/her working hours and enjoy more leisure time. The change of the wage rate, however, will have a more complex effect on one's labour supply decision. For those who do not participate before, if the increase of the wage rate exceeds the reservation wage, they will choose to participate and the working hours is determined by the marginal rate of substitution of consumption and leisure and the wage rate. For those individuals who already work positive hours, a wage increase will have both income and substitution effect. An income effect from wage increase will induce more leisure and less working hours and a substitution effect (from the increase of the opportunity cost of leisure) will induce more working hours and less leisure. The overall effect of labour supply depends on the relative magnitudes of the two. This result is important to explain why labour supply curve can be backward bending. For an individual, the initial small increase of the wage rate may have a dominated substitution effect, which leads him/her to work more hours, however, as wage grows higher and higher, income effect grows larger and may become greater in magnitudes than the substitution effect, therefore, the individual will eventually reduce his/her working hours.

The empirical evidences on the estimate of elasticity of labour supply have further proved the results from income-leisure model. The shape of the labour supply curve really depends on the relative magnitudes of the income elasticity and compensated (substitution effect) elasticity. For example, Hansson and Stuart (1985) have summarized that, the overall elasticity of labour supply from a wage change is 0.10, uncompensated elasticity is about 0.25 and income elasticity is about -0.15. However, male and female may have a different labour supply schedule. Generally, for males, the labour supply schedule is likely to be slightly backward bending. For females, the labour supply schedule is more strongly forward sloping, shown a strong positive substitution elasticity outweighing the weak negative income elasticity. This empirical evidence can also be used in explaining the fact that the male participation rate is generally declining with

national income and women's participation rises with nation income (Figure 2.3). For countries that average income is higher, higher wage rate induced strong income elasticity for males and strong substitution elasticity for females, which leads to lower participation rate for males and higher participation rate for females.

## Answer Key

Testname: UNTITLED69

- 1) B
- 2) A
- 3) A
- 4) D
- 5) B
- 6) B
- 7) D
- 8) A
- 9) D
- 10) B
- 11) A
- 12) C
- 13) A
- 14) D
- 15) B
- 16) D
- 17) E
- 18) B
- 19) B
- 20) A
- 21) C
- 22) C
- 23) C
- 24) A
- 25) B
- 26) D
- 27) D
- 28) D
- 29) D
- 30) C

### 31) Suggested Answer:

The consumer choice model is used to analyze an individual's labour supply decision. Consumers' preferences are represented by the indifference curve of consumption and leisure. Consumers' constraints are given by their income from working hours as well as a time constraint which is a combination of working hours and leisure. Consumers' objective is to maximize their total utility from consumption by choosing their preferred combination of income/consumption and leisure, as represented by their opportunity set or budget constraint. If this optimum occurs at zero hours of work, the individual does not participate. If optimal hours are positive, the individual participates, and the marginal rate of substitution between leisure and consumption equals to the wage rate.

The reservation wage is given by the marginal rate of substitution between leisure and consumption, at zero work, which is a critical wage in determining the participation decision. For a wage above the reservation wage, a consumer will choose to work. Otherwise, the consumer will not participate.

The budget constraint of a consumer is composed of two parts: non-labour income and wage income from working hours. Therefore, the change of non-labour income and wage rate will affect a consumer's labour supply decision. If non-labour income increases, there will be a pure income effect, an individual who chooses not to

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The empirical evidences on the estimate of elasticity of labour supply have further proved the results from income-leisure model. The shape of the labour supply curve really depends on the relative magnitudes of the elasticity and compensated (substitution effect) elasticity. For example, Hansson and Stuart (1985) have summarized that, the overall elasticity of labour supply from a wage change is 0.10, uncompensated elasticity is about 0.25 and income elasticity is about -0.15. However, male and female may have a different labour supply schedule. Generally, for males, the labour supply schedule is likely to be slightly backward bending. For females, the labour supply schedule is more strongly forward sloping, shown a strong positive substitution elasticity outweighing the weak negative income elasticity. This empirical evidence can also be used in explaining the fact that the male participation rate is generally declining with national income and women's participation rises with nation income (Figure 2.3). For countries that average income is higher, higher wage rate induced strong income elasticity for males and strong substitution elasticity for females, which leads to lower participation rate for males and higher participation rate for females.