TRL3025

October/November 2010

TRANSPORT PLANNING AND INVESTMENT (TRANSPORT ECONOMICS 302)

Duration   2 Hours

70   Marks

EXAMINERS
  FIRST
  SECOND
  EXTERNAL

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This examination paper consists of 16 pages + 1 page rough work

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INSTRUCTIONS:

THIS IS A <u>FILL IN</u> EXAMINATION - WRITE YOUR ANSWERS IN THIS BOOKLET AND
HAND IT IN TO THE INVIGILATOR WHEN YOU ARE DONE.

THIS EXAMINATION PAPER CONSISTS OF:

<u>SECTION A.</u> COMPULSORY MULTIPLE CHOICE QUESTIONS
(20 MARKS)

<u>SECTION B</u> COMPLETE ANY TWO (2) OF THE THREE (3) LONG QUESTIONS
(50 MARKS)

TOTAL OF 70 MARKS

SECTION A

ANSWER ALL THE QUESTIONS IN THIS SECTION
TOTAL OF 20 MARKS

QUESTION 1

Read each statement carefully and then choose the correct option.
Indicate your chosen answer by colouring the corresponding letter next to the correct option.
For example: 🔲

1   The indirect effect of transport on the linkage between transport and economic development relates to   **(1)**

    A   lower transport costs and dispersed markets
    B   large-scale production of a variety of activities
    C   improved transport services due to lower transport costs
    D   the job opportunities created by the development of infrastructure

2   Efficiency criteria should comply with three basic requirements Which one is not one of them?   **(1)**

    A   Measure the efficiency of the whole system
    B   Be expressed in numerical terms
    C   Measure all the benefits and costs
    D   Be statistically reliable

3   The benefit/cost ratio (BCR) is used to evaluate transport investment projects Which of the four statements is not correct?   **(1)**

    A   BCR < 1 investment held back
    B   BCR > 1 investment held back
    C   Annual growth over time = $b(1+g)t$
    D   BCR> 1 investment carried out

4   Which one of the following statements is false as far as prediction models are concerned?   **(1)**

    A   They predict the future performance of the system
    B   They do not rely very much on logical and causative aspects
    C   For them an understanding of the relationship between form and process becomes of decisive importance
    D   They may be used to extrapolate trends

5   Which one of the following is not a component of traffic?   **(1)**

     A   Usual traffic
     B   Generated traffic
     C   Development traffic
     D   Converted traffic

6   Which one of the following is not an element of road infrastructure costs?   **(1)**

     A   Capital costs
     B   Congestion costs
     C   Maintenance costs
     D   Administration costs

7   The overall objective of the airport master plan is to   **(1)**

     A   establish a schedule of priorities
     B   provide a concise and descriptive report
     C   provide guidelines for future development which will satisfy aviation demand
     D   present the pertinent backup information

8   Which one of the following statement is not a requirement for a functional transport model?   **(1)**

     A   It should measure the efficiency of the whole system
     B   It should explain the transport situation /behaviour in simple terms
     C   It should make a contribution to policy formulation
     D   It should predict the transport situation/behaviour meaningfully

9   Which one is correct? **Linear programming** makes the following assumption   **(1)**

     A   The operational formulation of goals
     B   Conditions which limit the scope of permissible solutions
     C   The linearity of the target function
     D   Information on real structural relations

10   Which one of the following techniques is **not used** in the economic evaluation of mutually exclusive alternatives?

                                                                                      (1)

     A   B/C ratio
     B   PVOC
     C   UMESC
     D   IRR

11 _____ expresses all cost items in terms of present value (1)

    A   NPV technique
    B   PVOC technique
    C   IRR technique
    D   B/C ratio

12 Which one of the following is not a tax relating to vehicle use? (1)

    A   Mass-distance tax
    B   Tax on vehicles
    C   Tyre tax
    D   Fuel tax

13 _____ in ports refer to the benefits that arise because of the geographical closeness of a variety of completely different industries (1)

    A   Economies of scope
    B   Economies of scale
    C   Localisation economies
    D   Urbanisation economies

14 **Gain in travel time (GT) can be used as a dimension** (1)

    A   When the users really gain
    B   Only for business travellers
    C   When it can be measured
    D   When it can be classified according to the different categories

15 Which one of the following is not a parameter of sensitivity analysis? (1)

    A   Residual value
    B   Time costs
    C   Traffic Growth rate
    D   Discount rate

16 Which one of the following is not one of the bond ratings when considering investments in airports? (1)

    A   Best grade
    B   High grade
    C   Medium grade
    D   Lower grade

[TURN OVER]

17   Which one of the following is a direct subsidy in port investment?   **(1)**

   A   construction subsidy
   B   capital equipment
   C   real estate
   D   wages

18   In rail transport an ownership model where there is a separate track organisation on the one hand and then multiple operators on the other hand is called   **(1)**

   A   Vertically integrated model
   B   Vertically separated model
   C   Track degradation model
   D   Track independent model

19   Which one of the following is not a factor to be considered in developing a transport policy?   **(1)**

   A   Priorities
   B   Ownership
   C   Tariffs
   D   Degree of subsidisation

20   Which one of the following is not one of the policy instruments used by government authorities to achieve their goals?   **(1)**

   A   Taxes and subsidies
   B   Promotional policy
   C   Moral persuasion
   D   Licensing

SECTION A   TOTAL **[20]**

SECTION B

**ANSWER ANY TWO (2) OF THE THREE (3) QUESTIONS IN THIS SECTION
TOTAL OF 50 MARKS**

PLEASE NOTE: ONLY THE FIRST TWO (2) QUESTIONS WILL BE MARKED IF YOU ANSWERED ALL THREE (3) QUESTIONS IN THIS SECTION

QUESTION 2

Discuss in detail the South African Policy on Road Infrastructure   **(25)**

QUESTION 3

(i)   Explain how the elementary consequences are identified in the multi-criteria evaluation of investment in transport infrastructure   **(5)**

(ii)   Fully discuss the identification of the dimensions in multicriteria evaluation   **(10)**

(iii)   Fully explain how the above dimensions in question 3 (ii) are changed into criteria in the multicriteria evaluation   **(10)**

QUESTION 4

Fully explain the interaction between a port and its environment [25]

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TOTAL [25]

SECTION B :   TOTAL [50]

ROUGH WORK