ROBERT MUGABE SCHOOL OF HERITAGE AND EDUCATION

DEPARTMENT OF SCIENCE AND TECHNICAL EDUCATION

MASTER OF EDUCATION SECONDARY IN-SERVICE DEGREE

LEVEL 2 SEMESTER 1

EXAMINATION QUESTION PAPER

MODULE CODE	TEBT521
MODULE NARRATION	BUILDING ECONOMICS
DATE	2024
DURATION	3 HOURS

INSTRUCTIONS TO CANDIDATES:

- Answer any three questions.
- All questions carry equal marks

1. Critique any three discounted measures that can be used to assess the viability of construction projects. [25]
2. (a) A 230mm perimeter wall under construction at a local college is 300m long and 1.6m high, the foundation is 700mm deep, the concrete footing is 230mm thick and 690mm wide. The wall has circular perforations/openings on its face spaced at 10m intervals centre to centre, measuring 350mm in diameter, covered with 18 gauge mesh wire and 1.2mm above natural ground level. The front side of the wall is to be built with face bricks and the rear side with hard commons and plastered with a 12mm thick cement mortar plaster.

   (i) Estimate the number of bricks required to build the perimeter wall [5]

   (ii) Estimate the cost of bricks if, face bricks cost \$150/1000 bricks and hard commons cost \$110/1000 bricks [5]

   (iii) Estimate the volume of cement and sand required to plaster the wall [5]

   (b) The construction of the perimeter wall was supposed to take 25 days at a budgeted cost of \$78 000, but on day 14, construction is only 43 % complete and \$44 000 has been used so far.

   Calculate,

   (i) Cost Variance [5]

   (ii) Estimated Cost to complete the wall [5].

3. Discuss the indirect factors that can affect the Contractor's building costs [25]

4. The directors for pension fund is considering investing some of its funds in the construction industry through either a block of flats or a shopping mall. The initial investment required for the shopping mall is \$2 700 000.00 (two million seven hundred thousand dollars) and \$ 2 790 000.00 (two million seven hundred and ninety dollars) for the block of flats. The table below shows the expected net incomes for the two investments for the next 5 years

Year	**Block of Flats**	**Shopping Mall**
1	200 000.00	320 000.00
2	480 000.00	460 000.00
3	780 000.00	750 000.00
4	1 155 000.00	1 178 000.00
5	1 355 000.00	1 368 000.00

Calculate the Net Present Value (NPV) of the two investments if the discount rate is 18% and advise the directors accordingly. [25]

5. (a)How relevant is the study of building economics to a developing country's economy like Zimbabwe? [10]

   (b) What are the three key factors affecting building economics? [15]

END OF EXAMINATION PAPER