NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH, NATURAL RESOURCES AND APPLIED SCIENCES

DEPARTMENT OF NATURAL AND APPLIED SCIENCES

QUALIFICATION: BACHELOR OF SCIENCE HONOURS	
QUALIFICATION CODE: 08BOSC	**LEVEL:** 8
COURSE NAME: BIOSYNTHETIC PATHWAYS AND MOLECULAR BIOLOGY	**COURSE CODE**: BPM821S
SESSION: NOVEMBER 2022	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

FIRST OPPORTUNITY QUESTION PAPER	
EXAMINER	DR LAMECH MWAPAGHA
MODERATOR:	DR EMMANUEL NEPOLO

INSTRUCTIONS

1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.
4. All written work **MUST** be done in **BLUE** or **BLACK** ink.

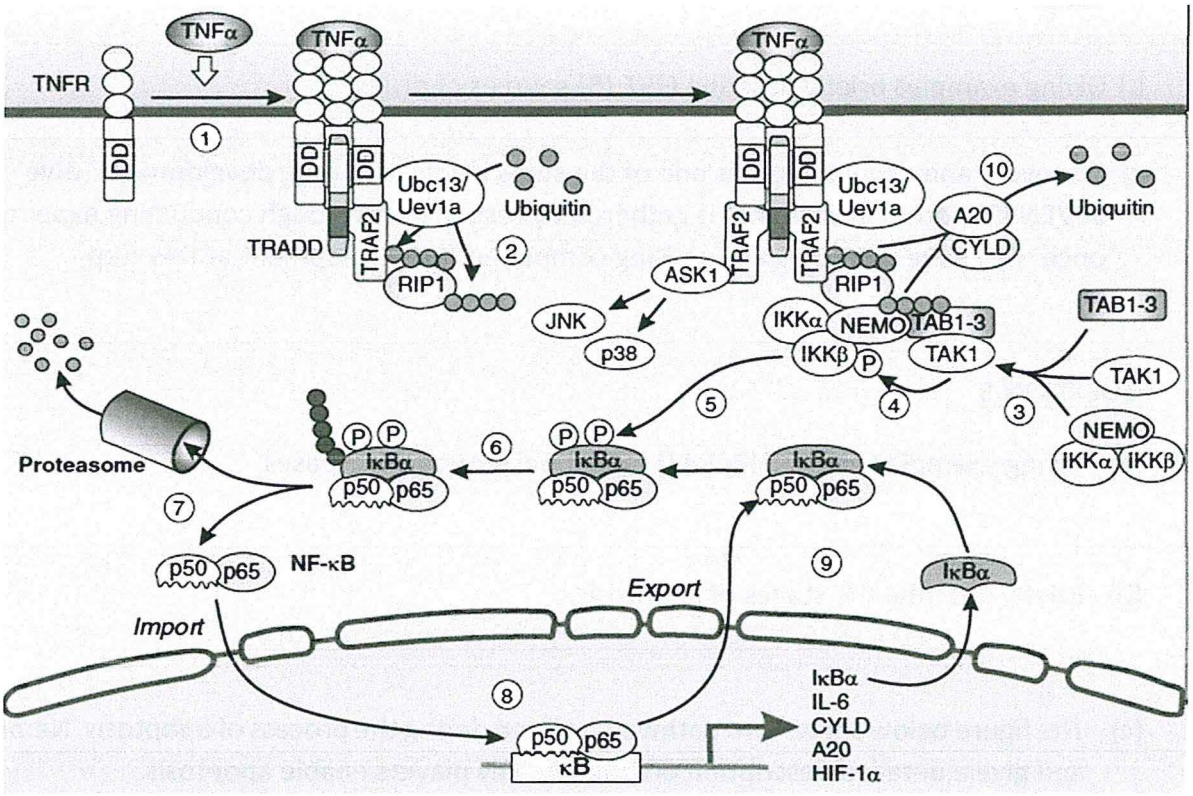
PERMISSIBLE MATERIALS

None

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES
(Including this front page)

QUESTION 3 **[10]**

The signalling pathway below is responsible for controlling processes such as inflammation, cell proliferation and apoptosis.



a) Name the signalling pathway (1)

b) Briefly describe the activation of the signalling pathway (5)

c) Outline **FOUR (4)** functions of the canonical Wnt signalling pathway (4)

QUESTION 6 **[18]**

a) State **FOUR (4)** reasons why cancer staging is important? (4)

b) Outline **SEVEN (7)** reasons why cancer biomarkers are missing the mark in cancer prognosis and diagnosis (7)

c) Highlight some of the Clinical applications and uses of Cancer Biomarkers (7)

QUESTION 7 **[14]**

a) Why is the activation of telomerase activity a "neoplastic" trait? (4)

b) Briefly discuss the following hallmarks of cancer; (10)

I. Deregulating cellular energetics;

II. Evading growth suppressors;

III. Activating invasion and metastasis;

IV. Resisting cell death;

V. Genomic instability and mutation;

THE END