GIRNE AMERICAN UNIVERSITY

2013

KKTC

SCHOLARSHIP EXAM

❖ Duration of the exam is 120 minutes.
❖ The contents of the exam will be Science and there are 100 questions in total.
❖ Please make sure that you mark your answers on the answer sheet.
❖ Please don’t forget to choose your three department preferences from the list.
❖ Your wrong answers will not affect your correct answers.
❖ Calculators are not allowed to be used in the exam.

GOOD LUCK
GRAMMAR EXAM

In each of the following items select the word/words or phrase that best completes the sentence.

1. Sarah wondered how ____________ her emails.
   (a) saved  
   (b) to save  
   (c) saving  
   (d) will save

2. Ben ____________ his new Facebook page.
   (a) pushed up  
   (b) seat up  
   (c) set up  
   (d) upset

3. Facebook is ____________ than Twitter.
   (a) best  
   (b) badder  
   (c) the best  
   (d) better

4. My football team ____________ the football league.
   (a) won  
   (b) winner  
   (c) is winner  
   (d) the best

5. ____________ did Kate go shopping last week? Five times.
   (a) How much  
   (b) How quickly  
   (c) How slowly  
   (d) How often
In the following items select the alternative which is true according to the information conveyed in each sentence.

6. Mary shouldn’t have drunk all the orange juice.
   
   (a) Mary did not drink all the orange juice.
   (b) She may not drink all the orange juice.
   (c) Mary should have refrained from drinking all the orange juice.
   (d) Maybe she will not drink the orange juice.

7. Spring time in Cyprus is warm but the winter is colder.
   
   (a) Spring time in Cyprus is warmer than the winter.
   (b) Spring time in Cyprus is cooler than the spring time.
   (c) The cooler weather in Cyprus is good during spring time.
   (d) Colder winters make spring time in Cyprus warmer.

8. This mobile phone belongs to Amy but the yellow one is Tom’s mobile phone.
   
   (a) The mobile phone belongs to Tom.
   (b) Amy has a yellow mobile phone.
   (c) Tom and Amy share their mobile phones.
   (d) Tom’s mobile phone is yellow.

9. Sharon could not get on the GAU bus because it was full up.
   
   (a) The GAU bus had a full petrol tank.
   (b) There was no room on the GAU bus, so Sharon could not get on it.
   (c) The GAU bus rode up the hill.
   (d) Sharon could not get her full case on the GAU bus.

10. The Professor’s lecture was very boring.
    
    (a) The Professor was very fed up.
    (b) The lecture was at the end of the long corridor.
    (c) The Professor’s lecture was uninteresting.
    (d) The lecture should have been interesting.
In the following items each sentence contains four words or phrase underline, marked A, B, C, or D. Select the underlined word or phrase which is incorrect or unacceptable.

11. I did wondering if you could give me a lift to university
   A               B       C
   D

12. tomorrow?

13. We will be mating for drinks tomorrow. It will be great if you can join us?
   A               B       C       D

14. Paula was dancing all night at the club. She was light for
   A               B       C       D
   work in the morning.

15. The moving was really scary but Tim was brave and watched
   A               B       C
   it until the end.
   D

16. The deadline for them assignment was two weeks away.
   A               B       C       D

In this section of the grammar test, you will read a short newspaper extract. The extract has missing word/words or phrases numbered 1 – 5. Select the corresponding word/words or phrase marked A, B, C, or D which should correctly fill the missing word/words or phrase in the newspaper extract.

A Colourful GAU Spring Fair.

The Girne American University 2012 Spring fair ________ on May 7th 2012 at the Girne campus. The festival ________ a traditional procession and ________ important guests. On the opening day of the festival, everyone enjoyed the concerts ________ by the new star of Turkish pop music, Murat Dalkilic and GAU’s own ________ ‘Sert Unsizler’.
17. A. taken place  B. took place  C. has placed  D. will place
18. A. start  B. begin  C. started with  D. the start
19. A. the welcoming  B. welcome  C. introduced  D. invited
20. A. performance  B. play  C. performed  D. proforma
21. grabbed  B. group  C. grant  D. friends

Select the corresponding word/words or phrase marked A, B, C, or D which are the correct past simple or past continuous form of the verbs in brackets.

The first blank is completed for you. **had**

21 I **had** (have) a wonderful biology teacher, Mrs Hughes. She **22 made** (make)
us excited about the subject because she was so interested herself. I remember one lesson in particular; we **23 studied** (study) different types of plants, and Mrs Hughes **24 described** (describe) the different parts of the flower. She **25 picked up** (pick up) a purple flower, I can’t remember exactly what it was, and then suddenly we **26 noticed** (notice) that she was **27 crying** (cry)!

She **28 apologised** (apologise) and **29 said** (say) that sometimes nature was so beautiful it just made her cry! We **30 didn’t know** (not know) what to do at first, but it certainly **31 made** (make) us think. Something similar **32 happened** (happen) while she **33 showed** (show) us how to work the microscope. She **34 examined** (examine) a slide of some plant tissue and she **35 smiled** (smile) all over her face. She suddenly **36 got** (get) all excited and **37 said** (say), ‘Isn’t it wonderful?’ Some students **38 laughed** (laugh) at her when she **39 didn’t look** (not look) but I didn’t. Somehow her enthusiasm **40 inspired** (inspire) me, and I started to like biology.

22. A. make  B. making  C. made  D. makes
23. A. studied  B. study  C. studying  D. studies
24. A. describing  B. described  C. describe  D. describes
25. A. picked up  B. pick up  C. picking up  D. pickings
26. A. noticing  B. notice  C. notices  D. noticed
27. A. cry  B. cried  C. cries  D. crying
28. A. apologising  B. apologies  C. apologise  D. apologised
29. A. said  B. say  C. saying  D. says
30. A. don’t know  B. does know  C. didn’t know  D. not know
31. A. making  B. made  C. makes  D. make
32. A. happened  B. happening  C. happens  D. happen
33. A. showing  B. showed  C. shows  D. show
34. A. examine  B. examines  C. examined  D. examining
35. A. smiled  B. smile  C. smiling  D. smiles
36. A. getting  B. got  C. gets  D. get
37. A. say  B. saying  C. said  D. says
38. A. laugh  B. laughs  C. laughing  D. laughed
39. A. wasn’t looking  B. not looking  C. not look  D. wasn’t look
40. A. inspire  B. inspired  C. inspiring  D. inspires

READING COMPREHENSION  (20 points)

Read the following three passages carefully. Select the response to the comprehension questions which most accurately agrees with what you have read. Mark your answers on your answer sheet.

Passage 1

The Cyprus Turkish Photography Association (Foder) is to donate the income of their photograph exhibition at the Ataturk Cultural Centre in Lefkosa to the Dr. Nicosia Burhan Nalbantoglu State Hospital Paediatric Oncology Service.

President of Foder, Altay Sayil and TRNC Minister of Finance, Ersin Tatar both made speeches. The photographs are on display until Friday, May 11.

Thirty-seven members have 117 photographs on display which show “reflection, texture, abstract, and water...” Ten members are exhibiting their photographic work for the first time. Photographs will be sold for 250TL, with all proceeds being donated to the Paediatric Oncology Service.
41. The Cyprus Turkish Photography Association is known as

   (a) Folder
   (b) Photograph
   (c) Foder
   (d) Filming

42. Donations will go to the

   (a) Patients Service
   (b) Paediatric Oncology Service
   (c) Orthopaedic Service
   (d) Photography Service

43. The exhibition will allow members to

   (a) Sell their work
   (b) Take photographs
   (c) Develop their photographs
   (d) Make digital photographs

44. The words “reflection, texture, abstract and water” (line 11) refer to

   (a) The Ataturk cultural centre
   (b) What the photographs on display show
   (c) The scenery at the centre
   (d) Things you can buy at the exhibition

45. According to the passage how much will photographs be sold for

   (a) As much money as possible
   (b) Whatever you would like to donate
   (c) Two hundred and fifty Turkish litre
   (d) Ersin Tatar
Passage 2

Paola and Imran have been married for 8 years. They have had many good times together. They have travelled the world together. They have two little girls together. They have started a chocolate business together. Lately, Paola and Imran have been fighting a lot. Business at the chocolate store is slow. Imran thinks it is Paola’s fault. They are having trouble with money. Paola thinks Imran spends too much. One evening, Paola decides to visit her mom for advice. Paola knocks on her mum’s door. Paola’s mum is happy. It is a surprise visit. She quickly sees, however, that something is wrong. Paola looks sad and tired. “Paola, what is the matter?” Mum asks. Paola tells her mum all that is going on. Mum smiles gently. She rubs Paola’s back. Then she tells Paola a story.

“Your father and I have a wonderful marriage. But we don’t always get along. There was a time when things were very bad between us. We fought all the time. You were just a little girl. One day we watched you playing on the floor. We knew we wanted to make our marriage work. We loved you very much. We loved each other very much. We knew we had to work harder on our marriage.”

“What did you do?” asks Paola.

“We agreed to talk more. We planned a special night each week for the two of us. We went to see someone who helps people with their marriages,” Mum says. “It was worth it. I can’t imagine not having your father in my life.”

Paola begins to feel better. “You are right,” she says. “What Imran and I have is worth working for.”

46. Where have Paola and Imran travelled to?

(a) England
(b) Australia
(c) Mexico
(d) All around the world

47. Why have Paola and Imran been fighting?

(a) Because they want to travel again
(b) They have money troubles
(c) They need to buy their daughter new clothes
(d) They want to buy a new business
48. When Paola’s mum and dad watched her playing on the floor they felt

(a) Angry with her
(b) Happy for her
(c) Excited for her
(d) Love for her

49. What do the words “what Imran and I have is worth working for” mean

(a) Paola wants to get a job
(b) She thinks that Imran should get another job
(c) She wants to make an effort to save her marriage
(d) They need to have more possessions

50. How many special nights did Paola’s mum and dad plan each week

(a) Two special nights each week
(b) One special night each week
(c) A special night to see someone who helps with marriages
(d) A lifetime of special nights
1) \((\sqrt{2} - \sqrt{3})^2 =\)

a) 5 - 2\sqrt{6}
b) 5 - \sqrt{6}
c) 1 - 2\sqrt{6}
d) 1 - \sqrt{2}
e) 1

2) A 3 by 4 rectangle is inscribed in circle. What is the circumference of the circle?

a) 2.5\pi
b) 3\pi
c) 5\pi
d) 4\pi
e) 10\pi

3) If \(a^2 = 12\), then \(a^4 =\)

a) 144
b) 72
c) 36
d) 24
e) 16

4) A certain animal in the zoo has consumed 39 pounds of food in six days. If it continues to eat at the same rate, in how many more days will its total consumption be 91 pounds?

a) 12
b) 11
c) 10
d) 9
e) 8
5) What is the length of the line segment in the x-y plane with end points at (-2, -2) and (2, 3)?

a) 3  
b) $\sqrt{31}$  
c) $\sqrt{41}$  
d) 7  
e) 9

6) A gasoline tank on a certain tractor holds 16 gallons of gasoline. If the tractor requires 7 gallons to plow 3 acres, how many acres can the tractor plow with a tankful of gasoline?

a) $\frac{6}{7}$  
b) $\frac{1}{6}$  
c) $\frac{1}{3}$  
d) $10\frac{2}{3}$  
e) $37\frac{1}{3}$

7) If $x^{-2} = 16$, what is the value of $x^2$?

a) $\frac{1}{16}$  
b) $\frac{1}{4}$  
c) 2  
d) 4  
e) 12
8) The perimeter of a 7-sided figure is 15. If the length of each side of the figure is increased by 2 units, what is the perimeter of the new figure?

a) 17
b) 22
c) 24
d) 29
e) 30

9) Which of the following CANNOT be the lengths of the sides of a triangle?

a) 1,1,1
b) 1,2,4
c) 1,75,75
d) 2,3,4
e) 5,6,8

10) First, 3 is subtracted from \( x \) and the square root of the difference is taken. Then, 5 is added to the result, giving a final result of 9. What is the value of \( x \)?

a) 3
b) 4
c) 5
d) 16
e) 19

11) What is the result of \( \frac{1}{2} \times \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \frac{5}{6} \times \frac{6}{7} \)?

a) \( \frac{1}{7} \)
b) \( \frac{3}{7} \)
c) \( \frac{21}{27} \)
d) \( \frac{6}{7} \)
e) \( \frac{7}{8} \)
12) If the function $f$ is defined by $f(x) = 2x + 3$, and if $f(a) = 11$, what is the value of $a$?

a) 4  

b) 7  

c) 11  

d) 17  

e) 25

13) In the figure at the left, all intersecting sides of the polygon meet at right angles. What is the area of the polygon?

\[ \text{Area} = 9 \times 8 + 2 \times 2 + 2 \times 3 = 72 + 4 + 6 = 82 \]

a) 108  

b) 112  

c) 102  

d) 98  

e) 96

14) What is the area of the triangle in the figure on the left?

\[ \text{Area} = \frac{1}{2} \times 5 \times 3 = 7.5 \]

a) 4.0  

b) 7.5  

c) 8.0  

d) 8.5  

e) 15.0
15) If a cube has a volume of 125, the perimeter of one face of the cube is:

   a) 5  
   b) 32  
   c) 25  
   d) 20  
   e) 100

16) Given that \( f(x) = 3x^2 - 4 \) and \( g(x) = 2x - 6 \). What is \( g(f(1)) \)?

   a) -2  
   b) 6  
   c) -8  
   d) 8  
   e) 2

17) In a sale, normal prices are reduced by 10%. The sale price of a jacket is £225. Work out the normal price of the jacket.

   a) 340  
   b) 200  
   c) 202.5  
   d) 375  
   e) 250

18) Express 161 as a percentage of 250.

   a) 64.4%  
   b) 64%  
   c) 60%  
   d) 6%  
   e) 161%

19) A curve has equation \( y = x^4 + 2x - 1 \). Find \( \frac{dy}{dx} \).

   a) \( x^2 + 2x - 1 \)  
   b) \( x^2 + 2x \)  
   c) \( 4x + 2 \)  
   d) \( 2x + 5 \)  
   e) \( 4x^3 + 2 \)
20) What is the sum of the interior angles of a regular hexagon?
   a) 180°
   b) 360°
   c) 540°
   d) 720°
   e) none of the above

21) Use \( x = \frac{y^2-4}{5} \) to work out the value of \( x \) when \( y = -3 \).
   a) 0
   b) 1
   c) 2.6
   d) -1
   e) 2

22) The planet Neptune is 4 496 000 000 kilometres from the sun. Write this distance in standard form.
   a) \( 44.96 \times 10^8 \)
   b) \( 4.496 \times 10^8 \)
   c) \( 4.496 \times 10^9 \)
   d) \( 4.496 \times 10^{10} \)
   e) \( 0.4496 \times 10^{-10} \)

23) Which of the answers below is the result of \( \frac{3a}{5} + \frac{8a}{10} = ? \)
   a) \( \frac{4a}{10} \)
   b) \( \frac{7a}{5} \)
   c) \( \frac{24a}{5} \)
   d) \( \frac{7a}{10} \)
   e) none of the above
24) Three angles in a triangle are in the ratio 6 : 5 : 7. Work out the size of the largest angle.

a) $60^\circ$
b) $180^\circ$
c) $70^\circ$
d) $50^\circ$
e) $120^\circ$

25) Which of the below is same as $\frac{1}{7+\sqrt{8}}$

a) $\frac{7-\sqrt{8}}{41}$
b) 1
c) $\frac{7+\sqrt{8}}{41}$
d) $\frac{1}{7}$
e) $\frac{7}{\sqrt{8}+1}$

26) If $f(x) = \frac{2}{x}$ and $g(x) = \frac{x+1}{x}$, which value of $x$ cannot be included in the domain of $f$ or $g$.

a) 1
b) 2
c) 0
d) -1
e) both a and d

27) Write down the next prime number after 91.

a) 92
b) 93
c) 95
d) 97
e) 101
28) Which of the following is a factor of \( f(x) = 2x^3 - 3x^2 - 39x + 20 \)?

a) \((x - 3)\)
b) \((x - 4)\)
c) \((x + 2)\)
d) \((x + 1)\)
e) None of the above

29) If a circle \( C \) has centre \((5, 7)\) and radius 4, which of the below is an equation for \( C \)?

a) \((x - 5)^2 - (x + 7)^2 = 4\)
b) \((x - 5)^2 - (y - 7)^2 = 4\)
c) \((x - 5)^2 + (y - 7)^2 = 4^2\)
d) \((x - 5)^2 + (y - 7)^2 = 4\)
e) \((x + 5)^2 + (x + 7)^2 = 16\)

30) If \( p = \begin{pmatrix} 2 \\ 3 \end{pmatrix} \) and \( q = \begin{pmatrix} -1 \\ 1 \end{pmatrix} \), then what is the result of \( p - q \)?

a) \( \begin{pmatrix} 1 \\ 2 \end{pmatrix} \)
b) \( \begin{pmatrix} 3 \\ 4 \end{pmatrix} \)
c) \( \begin{pmatrix} 3 \\ 2 \end{pmatrix} \)
d) \( \begin{pmatrix} 1 \\ 4 \end{pmatrix} \)
e) \( \begin{pmatrix} 3 \\ 3 \end{pmatrix} \)
1. A person runs up an escalator at twice the speed of the escalator. How much work did the escalator's motor do compared to the work the motor would have done if s/he would have stood still?

A. The motor did more work  
B. The motor did the same work  
C. The motor did less work  
D. Cant determine the answer from the information given

2. John has two 100W bulbs on his room. His stereo is on and is using another 100W. His computer and monitor are using 300W. His mini fridge is using another 200W. If a KW/hr of electrical energy costs 15cents, what is he charged for 6 hours worth of energy?

A. 10.5 cents  
B. 72 cents  
C. $1.05  
D. $72.00

3. What kinetic energy in J does an 8.24 x 10^4 kg airliner have when moving at a speed of 630 km/hr?

A. 1.93 x 10^6  
B. 1.78 x 10^7  
C. 1.83 x 10^8  
D. 1.26 x 10^9

The diagram below shows a wave on the sea. Use the information on the diagram to answer the next two (2) questions.

4. Which letter shows the wavelength of the wave?

A. A  B. B  C. C  D. D
5. Which letter shows the amplitude of the wave?

A. A  
B. B  
C. C  
D. D  

6. The force that keeps space telescopes in orbit is

A. Friction  
B. Gravity  
C. Lift  
D. Upthrust  

7. A water heater uses liquefied petroleum gas LPG, which contains propane C₃H₈. Which equation correctly represents the complete combustion of propane?

A. C₃H₈ + 4O₂ \rightarrow 3C + 4H₂O  
B. 2C₃H₈ + 7O₂ \rightarrow 6CO + 8H₂O  
C. C₃H₈ + 3O₂ \rightarrow 3CO₂ + 4H₂O  
D. C₅H₈ + 5O₂ \rightarrow 3CO₂ + 4H₂O  

8. Which of the following chemicals are alkenes?

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A. P and T  
B. U and R  
C. T and U  
D. T and S
9. Magnesium solid ribbon pieces react with dilute hydrochloric acid solution. A gas is produced causing effervescence (bubbles) in the solution. Which gas is produced; what test should be used to identify this gas?

A. O₂ gas; hold a glowing splint to it  
B. H₂ gas; hold a lighted splint to it to get a squeaky pop  
C. H₂ gas; use damp blue litmus paper  
D. Cl₂ gas; use damp red litmus paper

10. The following displacement reaction takes place upon heating.  
\[
\text{Fe(s)} + \text{CuO(s)} \rightarrow \text{FeO(s)} + \text{Cu(s)}
\]
Find the chemicals that are oxidized and reduced in this reaction.

A. Fe is oxidized, Cu is reduced.  
B. Fe is reduced, Cu is oxidized.  
C. Fe is reduced, CuO is oxidized.  
D. Fe is oxidized, CuO is reduced.

11. Magnesium is located in the second group and the third period of the Periodic Table. How many electrons does Magnesium have in its outer electronic shell?

A. 2 electrons  
B. 1 electron  
C. 3 electrons  
D. 6 electrons

12. Which of the following chemical equation is correct?

A. acid + base \rightarrow salt + oxygen  
B. acid + base \rightarrow metal + water + hydrogen  
C. acid + base \rightarrow salt + water  
D. acid + base \rightarrow salt + carbon dioxide
13. The following diagram shows pieces of cotton wools soaked in concentrated hydrochloric acid solution and ammonia solution.

Name the white solid product. Which process should occur before ammonia and hydrogen chloride gas particles react to produce the white solid?

A. Ammonium chloride; precipitation  
B. Ammonia gas; neutralisation  
C. Ammonium chloride; diffusion  
D. Nitrogen chloride; solidification

14. Which living group is multicellular and have a cell wall?

A. Animals  
B. Plants  
C. Bacteria  
D. Viruses

15. Where the faeces have stored?

A. Rectum  
B. Anus  
C. Ileum  
D. Colon

16. Which acid is found in the stomach?

A. Sulphuric Acid  
B. Nitric Acid  
C. Folic Acid  
D. Hydrochloric Acid
17. Which hormone lowers the blood glucose level?
A. Adrenalin  
B. Glucagon  
C. Insulin  
D. Oestrogen

18. Which process is not involved in nitrogen cycle?
A. Photosynthesis  
B. Decomposition  
C. Feeding  
D. Assimilation

19. Which one is a greenhouse gas?
A. Ethane  
B. Butane  
C. Propane  
D. Methane

20. How many chromosomes exist in human cells?
A. 23  
B. 46  
C. 56  
D. 22
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