English assignments during class suspension (13 Nov – 15 Nov)
(Due: 18 Nov)

S1-3
Choose any 3 iLearner exercises and finish all parts of each exercise.

S4-6
Choose any 3 iLearner listening exercises and finish all parts of each exercise.

iLearner website
https://www8.i-learner.com.hk/index2018.php?

S1-3 Programme
"Cross Curricular i-Learner"

S4-6 Programme
"DSE"

Contacts *(For password resetting and other questions)*
(852) 3904 1651 Hotline
(852) 9388 6251 WhatsApp
student@i-learner.com.hk Email

中六級_中文科

中六級	✓ 溫習《詞三首》（筆記會由各組老師於群組 / google drive 發放） ✓ 下星期二（19/11）早會中文溫習小測：詞三首 ✓ 預備寫作題目，可以是大綱，可以是一些資料（最少一頁） ● 題目：俗語說「萬般皆下品，惟有讀書高」，也有人說「讀書無用」。試寫作文章一篇，談談你對「讀書無用」的看法。

姓名：_____ 班別：_____(　　) 日期：14/11/2019

基督教中國佈道會聖道迦南書院
通識教育科

資料回應題

1. 細閱以下資料：

資料 A

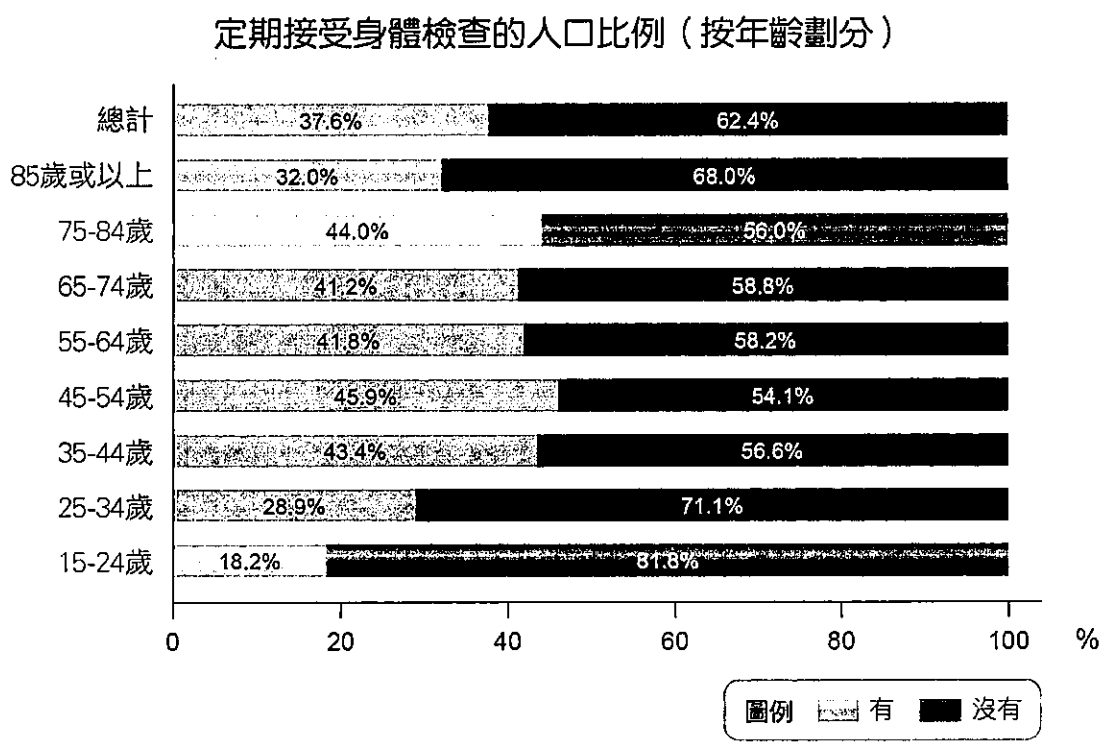
圖表 1

慢性疾病患者數目及百分比(按年齡劃分)

年齡組別	慢性疾病患者數目	慢性疾病患者在該年齡組別所佔百分比
25 歲以下	130,100	8.2%
25-34 歲	92,300	9.6%
35-44 歲	127,700	12.5%
45-54 歲	301,900	26.0%
55-59 歲	244,900	39.8%
60-64 歲	251,100	50.1%
65 歲或以上	835,200	74.3%
合計	1,983,200	28.4%

資料來源：政府統計處《主題性住戶統計調查第 63 號報告書》

圖表 2



資料來源：衛生署衛生防護中心《二零一四至二零一五年度人口健康調查報告書》

姓名：_____ 班別：_____(　) 日期：14/11/2019

資料 B

一些本地長者對基層醫療服務*的看法

陳伯伯：老人家的身體難免有小毛病，為了這點小事吃西藥和做身體檢查十分傷身，萬一驗出大病來，更要花錢醫治，辛苦自己又麻煩家人，正所謂「生死有命」，我寧願甚麼都不知道，安度晚年更好。

張婆婆：我長年腰背疼痛，但沒有人告訴我該看哪一科醫生。聽街坊說，有些機構免費讓老人家看病，但我記性不好，聽過就忘記了。

何伯伯：我幾年前已知道自己有高血脂和高血糖的問題，但因為行動不便，又沒有人陪伴，所以沒有定期覆診，反正我現在沒覺得不妥，應該沒問題吧。

周婆婆：人好端端的，做身體檢查很不吉利呢！而且檢查費用昂貴，隨時花掉整年的醫療券金額，若之後患感冒，就要自掏腰包看病，我哪有這麼多積蓄？

*基層醫療服務包括健康教育、防控疾病、復康服務等，着重促進健康和預防性護理，服務由社區而非醫院提供。

資料 C

特首林鄭月娥發表的最新一份施政報告着墨於基層醫療，計劃將地區康健中心擴展至全港十八區。

本年九月，政府以葵青區作為試點，設立首間地區康健中心，葵青區居民憑住址證明，即可登記成為終身會員，使用中心的設施和服務，例如使用健康資訊站、免費諮詢護理人員、藥劑師和社工、接受免費的初步身體評估等。中心會根據評估結果，推薦會員參加中心舉辦的活動，如體重管理課程、瑜伽班等；若會員有慢性病風險或病徵，如高血壓、糖尿病或肌肉骨骼問題，將獲轉介至參與計劃的網絡醫生，作進一步診症，政府會就每次診症資助最多 250 元。患者亦可參加由政府津貼的慢性疾病管理計劃，以每次 150 元的優惠價錢接受專科治療，如職業治療、營養治療、病理化驗、中醫服務等。中心亦接收由鄰近醫院轉介的心肌梗塞、中風、髖骨骨折患者，為他們提供物理治療等復康服務。

為方便居民，康健中心另設五個附屬中心，分別位於葵涌東北、葵涌中南、葵涌西、青衣東北及青衣西南，將於一年內投入服務。政府每年撥出約 1 億元作為康健中心的營運資金，預計每年可服務區內 2 萬名居民或慢性病高危人士，以及 3.5 萬名慢性疾病患者。當局會定期進行公眾諮詢，收集意見以改善服務。

(a) 根據資料 A 圖表 1 及圖表 2，就香港居民患慢性疾病及定期接受身體檢查的情況，闡述兩個結論。(4 分)

(b) 就資料 B，指出及解釋可能妨礙長者接受基層醫療服務的兩個原因。(5 分)

(c) 利用所提供的資料，解釋設立地區康健中心如何協助改善本港的公共衞生。(8 分)

請自行使用單行紙完成以上題目，並於 18/11/2019 早上班主任時間繳交。

姓名：_____ 班別：_____(　　) 日期：15/11/2019

基督教中國佈道會聖道迦南書院
通識教育科

延伸回應題

細閱以下資料，然後回答問題。

寵物被人類視為朋友，有些人甚至把寵物當成親人或孩子，是他們的心靈寄託。不過，有研究發現寵物的碳足跡竟比汽車還大，例如飼養一隻中等體積的狗一年，所產生的二氧化碳排放量高達 4,200 千克，比駕駛一輛 2019 年新款豐田 SUV 四驅車一年的排放量更高。另外，美國作為全球最多人飼養貓狗的國家，有多達 1 億 6,000 萬隻寵物貓狗，每年排放的溫室氣體總計約 6,400 萬噸，相當於 1,300 萬輛汽車的排放量。因此，有學者大膽建議人們放棄飼養寵物。

學者指出，寵物飼養當中，膳食一環最不環保，原因是很多寵物主人用坊間售賣的寵物食品餵養寵物，這些食品的生產過程產生碳排放，一方面因為食品工廠使用化石燃料，另一方面因為這些食品採用高比例的肉食成分，以滿足寵物的蛋白質營養需要，而畜牧業正是溫室氣體排放的重要源頭。除此之外，不少主人因食品標籤不清晰或溺愛寵物而過量餵食，變相造成更大的浪費和污染。

目前，飼養寵物的風潮正吹向新興國家，寵物經濟方興未艾。以中國為例，根據國家統計局 2016 年的數字，中國養狗的人數是世界第三，養貓的人數更是世界第二。根據《2019 年中國寵物行業白皮書》，2019 年全國城鎮的寵物貓狗總數有 9,915 萬隻，較 2018 年增加 8.4%；寵物貓狗的消費市場規模亦較 2018 年增加 18.5%，達到 2,024 億元人民幣，人們六成以上的花費用於寵物的主糧和零食，其餘是寵物用品、診療服務、美容等。最近江蘇一名狗主花了 35,000 元人民幣為其寵物建造一間狗別墅，採用古色古香的中式設計，還有冷氣、自動投食器、游泳池、跳水台、陽光房、投影器等設施，他拍片介紹並上載互聯網，引起網民熱議，大嘆「人不如狗」。

(a) 解釋中國發展寵物經濟可能引發的爭議。(8 分)

(b) 「在全球環保工作上，個人能作出的貢獻比企業更大。」你是否同意這看法？解釋你的答案。(12 分)

請自行使用單行紙完成以上題目，並於 18/11/2019 早上班主任時間繳交。

Economics assignments during class suspension (13 Nov – 15 Nov)

S4

1. Login to google classroom (2019-20 S4 Economics)
   Download and complete worksheet "CaseStudy_Ch4" (Due: 18 Nov)
2. Quiz (Chapter 4) on 14 Nov (Thur) postponed to
   18/11(Mon) for Gp A (Ms Au) and 19/11(Tue) Gp B (Ms Chan)

S5

1. Login to google classroom (2019-20 S5 Econ)
   Watch the video, "Unemployment" and "Nominal and Real interest rate". Then fill in the google form. (Due: 18 Nov)
2. Pre-study Textbook: Section 21.4. Download and complete Worksheet
   (Unit 21 - Classwork 3).
3. Preparation on Quiz (Chapter 15&16) on 19/11 (Tue)

S6

1. Drilling on DSE past paper (questions can be downloaded from google classroom)

GEOG assignments during class suspension (13 Nov – 15 Nov)

S3

1. Pre lesson preparation: chapter 5.4
2. Complete the summary at the end of the chapter 5.4

(Check in class)

S4

Login to google classroom (S4 GEOG)

1. Complete Essay Question given on Monday (11 Nov)
2. Complete Practice exercise 1

(Due: 18 Nov)

S5

1) Revise Chapter 5.1
2) Revision Test Essay Correction

(Due: 18 Nov)

S6

1) Revise Core modules
2) Complete Past Paper 2015 & 2016

(Due: 18 Nov)

ECF Saint Too Canaan College

S.6 Mathematics

Revision Homework

Name: _____ Marks: _____

Class: _____ ( ) Date: _____

SECTION A(1) (35 marks)

1. Simplify $\frac{(xy^2)^{-4}}{x^3}$ and express your answer with positive indices. (3 marks)

2. Make y the subject of the formula $x(y-1)=2y-5$. (3 marks)

3. Factorize

(a) $4a^2 - 4ab + b^2$,

(b) $1 - 4a^2 + 4ab - b^2$.

(3 marks)

4. **(a)** Solve the inequality $\frac{4x+1}{5} + 3 > x$.

(b) How many integers satisfy both the inequalities $\frac{4x+1}{5} + 3 > x$ and $2x + 2 \geq 9$?

(4 marks)

5. The cost of a dress is \$160. The marked price of the dress is 25% above its cost.

(a) Find the marked price of the dress.

(b) If the dress is sold at a price such that there is no loss or gain, find the discount per cent on the marked price of the dress.

(4 marks)

6. The coordinates of the points P and Q are $(-1, -4)$ and $(a, -2)$ respectively. P is rotated clockwise about the origin O through $90°$ to P'.

(a) Find the coordinates of P'.

(b) If P', O and Q are collinear, find a.

(4 marks)

7. Peter and Mary shared a bag of candies. The number of candies Mary had is twice that of Peter. If Mary gives 7 candies to Peter, the number of candies Mary has is half of the number of candies Peter has. How many candies were there in the bag?

(4 marks)

8.

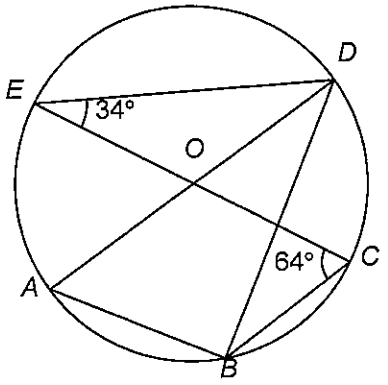


Figure 1

In Figure 1, O is the centre of the circle. AD and CE are diameters of the circle. It is given that $\angle OCB = 64°$ and $\angle OED = 34°$.

(a) Find $\angle OAB$.

(b) Find $\dfrac{AB}{AD}$.

(5 marks)

9. The weight of a watermelon is measured as 6.8 kg, correct to the nearest 0.1 kg.

(a) Find the least possible weight of the watermelon.

(b) Sarah cuts the watermelon equally into 8 slices. Is it possible that the weight of each slice of watermelon is measured as 844 g, correct to the nearest g? Explain your answer.

(5 marks)

SECTION A(2) (35 marks)

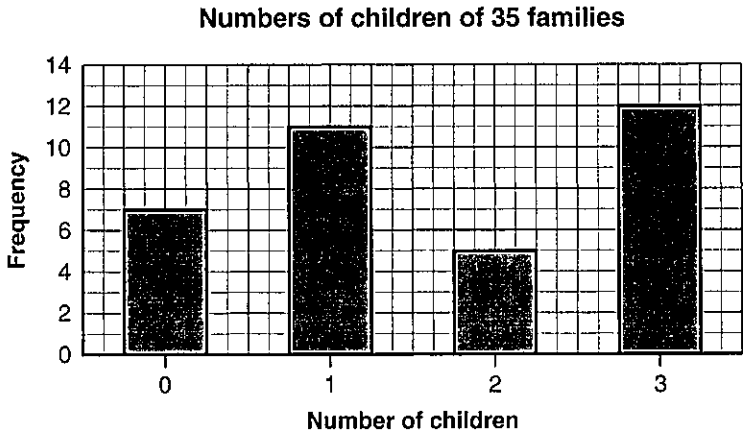
10. It is given that $g(x)$ is the sum of two parts, one part varies as x and the other part varies as x^3. Suppose that $g(-1) = g(3) = 12$.

(a) Find $g(x)$. (3 marks)

(b) Helen claims that the equation $g(x) = 0$ has irrational roots. Do you agree? Explain your answer.

(3 marks)

11. The bar chart below shows the distribution of the numbers of children of 35 families.



(a) Find the range, the median and the standard deviation of the above distribution. (3 marks)

(b) Two families are not included in the graph. After including these two families, the range is increased by 1, while the median is unchanged.

(i) Find the number of children of each of these two families.

(ii) Find the mean number of children of these 37 families.

(4 marks)

12. In Figure 2, $ABCD$ is a rhombus. E and F are points on BC and CD respectively such that $AE \perp BC$ and $AF \perp CD$. AE and AF intersect BD at G and H respectively.

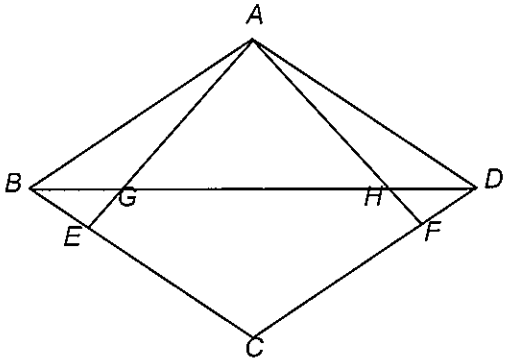


Figure 2

(a) Prove that $\triangle ABE \cong \triangle ADF$. (2 marks)

(b) Is $\triangle AGH$ an isosceles triangle? Explain your answer. (2 marks)

(c) If $\angle GAH = 60°$, show that $BG = GH$. (3 marks)

13. The coordinates of points X and Y are $(-3, 7)$ and $(5, 1)$ respectively. P is a moving point in the rectangular coordinate plane such that $PX = PY$. Denote the locus of P by Γ.

(a) **(i)** Find the equation of Γ.

(ii) Describe the geometric relationship between Γ and the line segment XY.

(3 marks)

(b) It is given that a circle passes through X and Y. Denote the centre of the circle by R.

(i) Does Γ pass through R? Explain your answer.

(ii) The line $y = x$ divides the circle into two equal halves. Find the coordinates of R.

(4 marks)

14. Figure 3(a) shows a closed vessel with some water, which is in form of an inverted right circular cone. The base radius and the height of the cone are 18 cm and 24 cm respectively. Kelly finds that the depth of water in the vessel is 8 cm.

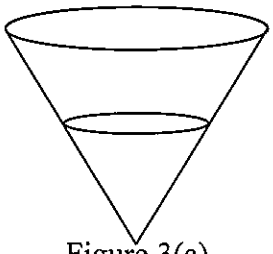


Figure 3(a)

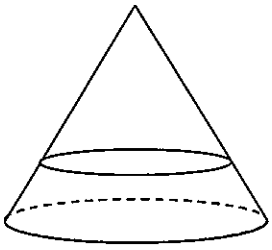


Figure 3(b)

(a) **(i)** Find the radius of the water surface.

(ii) Find the area of the wet curved surface of the vessel in terms of π.

(3 marks)

(b) Kelly turns the vessel upside down as shown in Figure 3(b).

(i) Find the new depth of water, correct to 1 decimal place.

(ii) Kelly claims that the wet curved surface of the vessel has increased. Do you agree? Explain your answer.

(5 marks)

ECF Saint Too Canaan College

S6 Mathematics Module 1

Special HW

Name: _____ Class: _____(_____) Date: 2019-11-14 Grade: _____

1. **(a)** Find $\frac{d}{dx}\left(\frac{e^x}{e^x+1}\right)$.

(b) Hence evaluate $\int_0^1 \frac{e^x}{(e^x+1)^2}\,dx$.

2. It is given that $y = x\sqrt{4-x^2}$.

(a) Prove that $\frac{dy}{dx} = \frac{4-2x^2}{\sqrt{4-x^2}}$.

(b) Hence prove that $\int_0^1 \frac{x^2}{\sqrt{4-x^2}}\,dx = 2\int_0^1 \frac{1}{\sqrt{4-x^2}}\,dx - \frac{\sqrt{3}}{2}$.

3. Evaluate $\int_2^3 2x\sqrt{x^2-4}\,dx$.

4. Evaluate $\int_1^4 \frac{x}{4x^2+1}\,dx$.

5. Evaluate $\int_3^{10} \frac{2x+3}{\sqrt{x^2+3x-2}}\,dx$.

6. Evaluate $\int_{-1}^2 (x+1)e^{x^2+2x-3}\,dx$.

7. Evaluate $\int_0^1 \frac{e^x-2x}{(e^x-x^2)^2}\,dx$.

8. Evaluate $\int_{\frac{1}{2}}^1 \frac{x-3}{(2x+1)^3}\,dx$.

S6 M2 Ch15 Vector Products and Scalar Products worksheet

1. If $|\mathbf{a}|=4$, $|\mathbf{b}|=3$ and the angle between **a** and **b** is 45°, find the values of the following.

   (a) $\mathbf{a}\cdot\mathbf{b}$

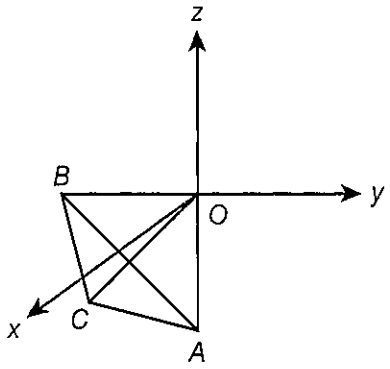
   (b) $(2\mathbf{a}+3\mathbf{b})\cdot(\mathbf{a}-\mathbf{b})$

   (c) $|\mathbf{a}-\mathbf{b}|^2$

2. If $|\mathbf{a}|=4$, $|\mathbf{b}|=2$ and $\mathbf{a}\cdot\mathbf{b}=3$, find the angle between $2\mathbf{b}$ and $\mathbf{a}-2\mathbf{b}$. (Give your answer correct to the nearest 0.1°.)

3. **a** and **b** are orthogonal vectors, where $|\mathbf{a}|=\sqrt{3}$ and $|\mathbf{b}|=\sqrt{2}$. If $\mathbf{u}=4\mathbf{a}+3\mathbf{b}$ and $\mathbf{v}=3\mathbf{a}-6\mathbf{b}$, prove that **u** and **v** are orthogonal vectors.

4. In the figure, $\overrightarrow{OA}=-2\mathbf{k}$, $\overrightarrow{OB}=-2\mathbf{j}$ and $\overrightarrow{OC}=3\mathbf{i}-2\mathbf{j}-2\mathbf{k}$. *M* and *N* are two points on *AB* and *OC* respectively such that $AM:AB=\lambda:1$ and $ON:OC=\mu:1$, where $0<\lambda<1$ and $0<\mu<1$. Suppose *MN* is perpendicular to both *AB* and *OC*.



   (a) Express $\overrightarrow{MN}$ in terms of λ, μ, **i**, **j** and **k**.

   (b) Find the values of λ and μ.

   (c) Find the shortest distance between *AB* and *OC*.

   (d) (i) Find $\overrightarrow{AB}\times\overrightarrow{AC}$.

   (ii) Let *D* be the projection of *O* on the plane *ABC*. Find the coordinates of the intersecting point of two straight lines *OD* and *MN*.

5. It is given that the coordinates of *A*, *B*, *C* and *D* are (2, 1, 4), (5, 1, 1), (5, 3, −1) and (1, 0, −5) respectively.

   (a) Find the volume of the tetrahedron *ABCD*.

   (b) If Δ*BCD* is the base, find the height of the tetrahedron.

   (c) Find the angle between *AD* and the plane *BCD*. (Give your answer correct to the nearest 0.1°.)

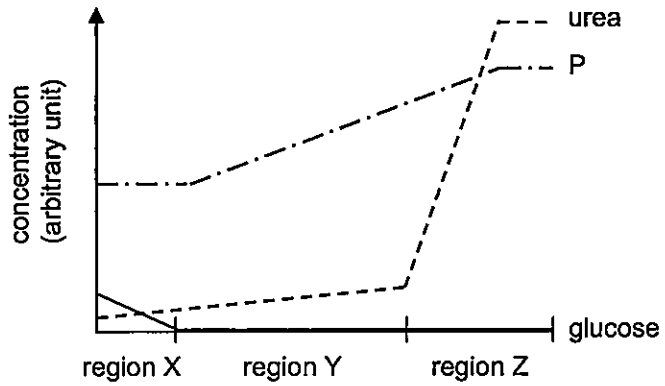
6. It is given that *O* is the origin, and the coordinates of *A* and *B* are (7, −4, 0) and (−2, 8, 3) respectively. If the coordinates of *C* are $(-t, t-1, t+2)$ such that $\overrightarrow{OA}$, $\overrightarrow{OB}$ and $\overrightarrow{OC}$ are coplanar, find the value of *t*.

ECF Saint Too Canaan College
2019-2020 S.6 Biology
Revision Exercise

Name: _____
Class: 6 _____ ( )
Date: _____

Answer **ALL** questions. Write your answers in the spaces provided.

1 The graph below shows the changes in the concentration of glucose, urea and substance P in glomerular filtrate as the filtrate flows along the kidney tubule of a healthy person.



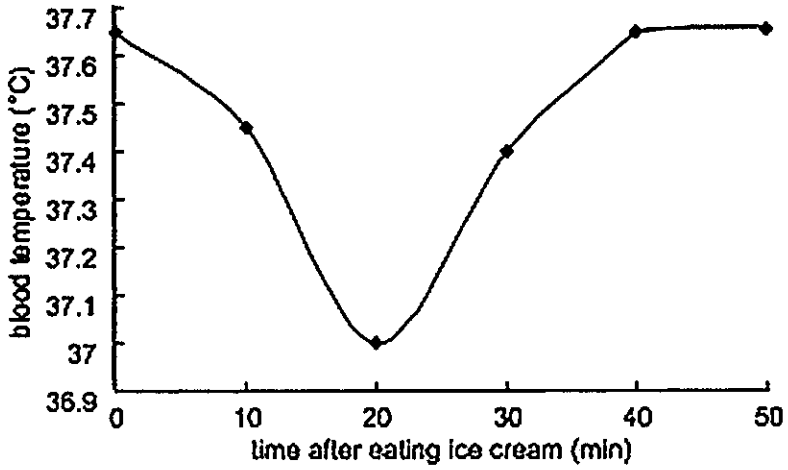
(a) Which region of the kidney tubule does region X represent? Explain your answer with reference to the graph. (3 marks)

(b) The cells in region X contain numerous mitochondria. State how this facilitates their function. (2 marks)

(c) Explain why concentration of urea increases in region Z. (2 marks)

(d) Suggest what substance P is. (1 mark)

2. The diagram below shows the change in blood temperature of a person who ate an ice cream on a hot summer day.



(a) Which part of the body detects changes in blood temperature? (1 mark)

(b) Explain why the blood temperature decreased after the person ate an ice cream. (1 mark)

(c) Estimate from the graph the time needed for the blood temperature to return to normal. (1 mark)

(d) Given that evaporation of sweat was the main way of heat loss from the body that day, describe and explain how the skin temperature changed immediately after the person ate the ice cream. (4 marks)

Name: _____

Class: 6 _____ ( )

ECF Saint Too Canaan College
Form 6 Chemistry
Assignment during school suspension period (13th – 15th Nov 2019)

Guidelines:

1. If you have a printer at home, please print out the assignments attached below; if not, please do it on a separate piece of paper.
2. The assignment will be counted as "Classwork" and to be checked on 19th Nov (Tue).
3. The MC Questions are for concepts checking. You will not find any MC in DSE Paper 2.

Part XIII Industrial chemistry **Chapter 51 Quiz Rate equation** There are **8** questions in Section A and **1** question in Section B. Answer **ALL** questions.	Marks:	/ 15

Section A Multiple-choice questions (8 marks)

1. Which of the following statements about the rate constant is INCORRECT?
   A. It is a constant value at a certain temperature.
   B. The value of rate constant increases with the temperature of the system.
   C. The value of rate constant increases with the concentration of reactants.
   D. A larger value of rate constant indicates a faster reaction.

   ☐

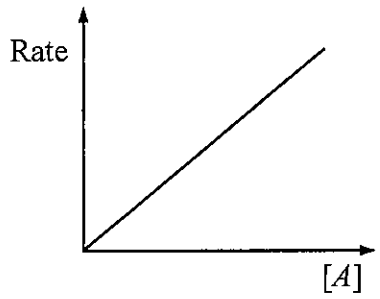
2. Which of the following statements about a zeroth order reaction is INCORRECT?
   A. The rate of reaction is equal to the rate constant.
   B. The concentration of the reactant decreases uniformly over time.
   C. The rate-concentration graph gives a horizontal line.
   D. An increase in concentration of reactant increases the rate of reaction.

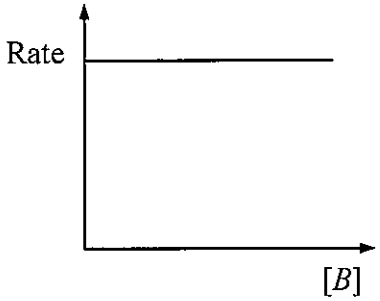
   ☐

3. A student carried out experiments to find the rate equation of the following reaction:

$$A(aq) + 2B(aq) \rightarrow C(aq)$$

The following two rate-concentration graphs are obtained.





Which of the following is the rate equation for the reaction?

A. Rate = $k[A][B]$

B. Rate = $k[A]$

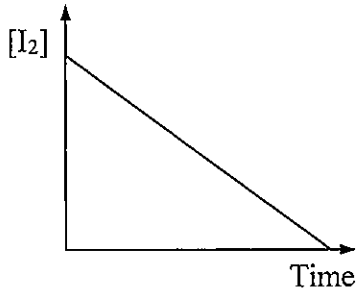
C. Rate = $k[A]^2[B]$

D. Rate = $k[A]^2$

Questions 4 and 5 refer to the following reaction:

$$CH_3COCH_3 + I_2 \rightarrow CH_3COCH_2I + HI$$

The change of iodine concentration against time is plotted as follows:



4. The graph shows that the rate of the above reaction is

A. directly proportional to $[I_2]$.

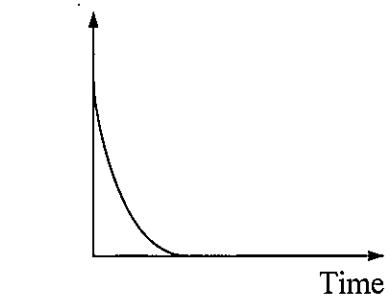
B. inversely proportional to $[I_2]$.

C. directly proportional to log $[I_2]$.

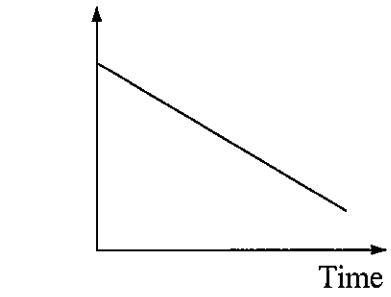
D. independent of $[I_2]$.

5. When fixing the concentration of iodine but varying the concentration of propanone, it is found that the reaction is first order with respect to propanone. Which of the following graphs is correct?

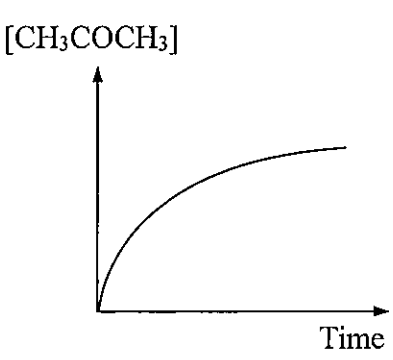
A.



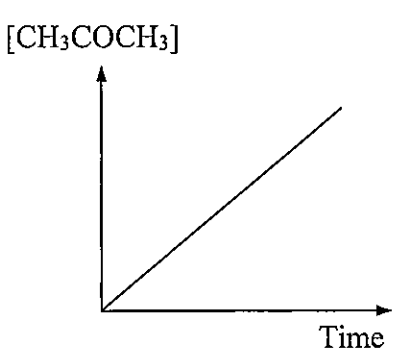
B.



C.



D.



Questions 6 and 7 refer to the following reaction:

$$2Na_2S_2O_3 + I_2 \rightarrow Na_2S_4O_6 + 2NaI$$

6. Which of the following methods can be used to follow the progress of the reaction?

   A. Measure the change in mass of the reaction mixture

   B. Measure the change in pressure of the reaction system

   C. Measure the change in colour intensity of the reaction mixture

   D. Measure the change in pH of the reaction mixture

7. You are given some information about the above reaction at 298 K:

Experiment	Initial concentration (mol dm^{-3})		Initial rate (mol dm^{-3} s^{-1})
	$[I_2]$	$[S_2O_3^{2-}]$	
1	0.01	0.01	0.0004
2	0.01	0.02	0.0004
3	0.02	0.01	0.0008

Which of the following is the rate equation for the reaction?

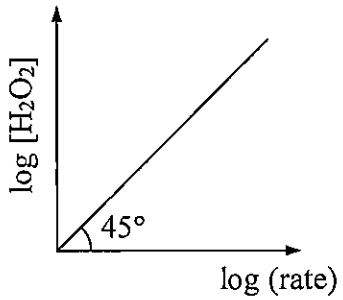
A. Rate = $k[I_2]$

B. Rate = $k[I_2][S_2O_3^{2-}]$

C. Rate = $k[S_2O_3^{2-}]$

D. Rate = $k[I_2]^2[S_2O_3^{2-}]$

8. A student investigated the rate of decomposition of H_2O_2. He varied the initial concentration of H_2O_2 and measured the initial rate of reaction. The result was plotted below:



What is the rate equation for the decomposition?

A. Rate = k

B. Rate = $k[H_2O_2]$

C. Rate = $k[H_2O_2]^2$

D. Rate = $[H_2O_2]^3$

- END OF SECTION A -

Section B Structured questions (7 marks)

1. You are given some information about the following reactions at 273 K.

$A \rightarrow$ products

Experiment	Initial [A] (mol dm^{-3})	Initial rate ($\times 10^{-4}$ mol dm^{-3} s^{-1})
1	0.5	1.5
2	1.0	6.0
3	2.0	13.5

(a) Deduce the order of reaction with respect to A and write the rate equation for the reaction.

(2 marks)

(b) Calculate the rate constant of the reaction at 273 K.

(1 mark)

(c) Sketch a graph to show the change in rate against [A].

(2 marks)

(d) State and explain the effect of increasing the concentration of A on the value of the rate constant.

(2 marks)

- END OF SECTION B -

(1990-CE-PHY I - 2)

1. Figure 3 shows part of the route of a roller-coaster in an amusement park. A cart full of passengers with total mass 1200 kg runs down from rest at the starting point H to the terminal platform. H is 30 m above the terminal platform. The track provides an average frictional force of 300 N throughout the journey.

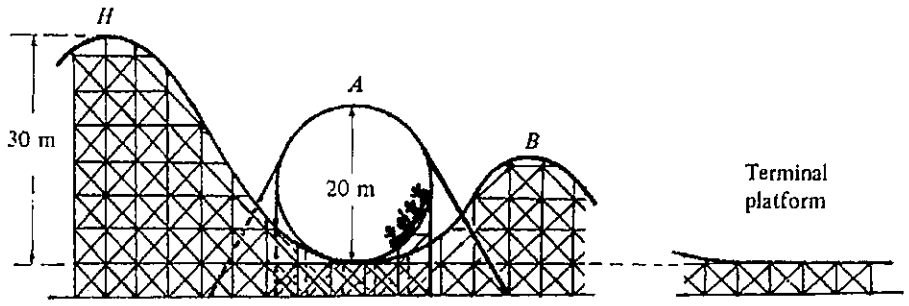


Figure 3

(a) The cart travels a distance of 150 m to reach the highest point A of the vertical loop, which is 20 m above the terminal platform.

(i) In moving from H to A ,calculate

(1) the loss in potential energy,

(2) the work done against friction, and

(3) the gain in kinetic energy of the cart.

(ii) Find the speed of the cart at A.

(7 marks)

(b) The cart reaches the terminal platform at a speed of 10 ms^{-1}. A braking device at the platform stops tile cart in 2 seconds. Find the average force on the cart exerted by the device.

(3 marks)

(c) Suggest one safety device for passengers riding on the roller-coaster and briefly explain its function.

(2 marks)

(d) In the design of the roller-coaster do you think the summit B can be higher than point A ? Explain briefly. (3 marks)

2.

Figure 1

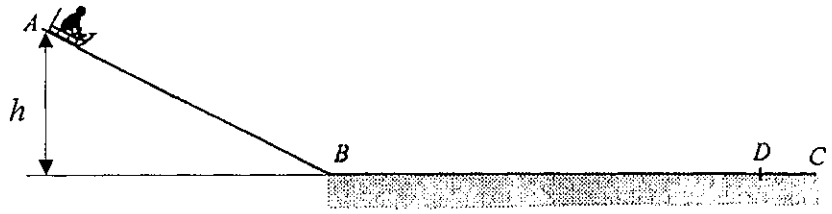


Figure 1 shows the layout of a runway *ABC* in an amusement park. *AB* is an icy smooth inclined plane and *BC* is a rough horizontal surface. At time $t = 0$, a boy sitting on a sledge slides down from rest at *A* along the runway. At $t = 5$ s, the sledge reaches *B* with a speed of 8 m s^{-1}. The sledge then decelerates uniformly along *BC* and finally stops at point *D* at $t = 15$ s.

(a) Sketch the graph of the speed of the sledge against time from $t = 0$ to 15 s.

(3 marks)

(b) Consider the sledge and the boy as one body. Draw a labeled diagram to show all the forces acting on the body as it slides along *AB*.

(2 marks)

(c) Find

(i) the height *h*

(i) the acceleration of the sledge as it slides along *AB*,

(ii) the stopping distance *BD*,

(iii) the frictional force acting on the sledge as the sledge travels along *BC*. (Given : Total mass of the sledge and the boy = 60 kg.)

(6 marks)

3.

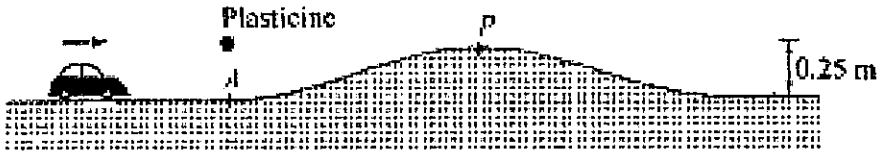


Figure 3

A toy car of mass 0.2 kg is moving at a speed 3 m s^{-1} on a smooth horizontal runway. When the car passes through a point *A* on the runway, a lump of plasticine of mass 0.1 kg is dropped from a height slightly above it and sticks to it.

(a) Find the speed of the car after the plasticine sticks to it.

(2 marks)

(b) The runway is curved upwards to a height 0.25 m at point *P* as shown in Figure 3. Can the car pass point *P* ? Show your calculations.

(3 marks)

(1998-CE-PHY I - 2)

2.

Figure 3

Figure 3 shows a cannon of mass 1000 kg. It fires a metal ball of mass 10 kg in order to destroy a fixed target. Assume the ball travels with a constant horizontal speed of 100 m s^{-1} towards the target.

(a) Suppose that the minimum energy required to destroy the target is 60 000 J. Explain whether the ball will destroy the target.

(2 marks)

(b) The cannon recoils as the ball is fired.

(i) Find the recoil speed of the cannon. (2 marks)

(ii)

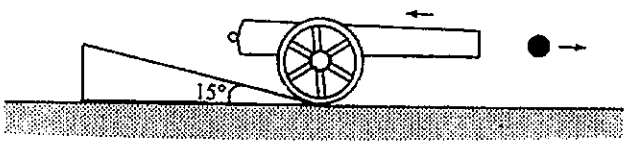


Figure 4

To stop the cannon, a smooth plane inclined at 15° to the horizontal is placed behind the cannon. (See Figure 4.) How far will the cannon move up along the inclined plane ?

(3 marks)

(c) Suppose that in firing the ball, 80 000 J of energy is lost as heat, light and sound. Find the efficiency of the cannon in firing the ball.

(3 marks)

(d) The ball hits the target and becomes embedded in it.

(i) If the ball takes 0.05 s to come to a rest inside the target, find the average force exerted by the target on the ball.

(2 marks)

(ii) A student thinks that as the ball and the target are both at rest after the impact, momentum has been lost. He asks why the law of conservation of momentum does not apply in this process.

If you were a teacher, how could you answer this question ?

(3 marks)

S6 BAFS (Business Module)

1. Prepare Financial Management Ch 5 Working Capital Management
2. Try p.142 Q5-1, Q5-2

S6 ICT Exercise
MC Questions

There are 40 questions in this paper. Choose the most suitable answers.

1. A mobile operating system uses 16 bits and 64 bits for representing a character and a number respectively. How many bytes are required for representing the string `'338Pearson'`?
   A. 10
   B. 20
   C. 31
   D. 38

2. Which of the following statements about object linking used in office automation software is/are correct?
   (1) The linked objects of a document created by different applications must be saved in the same folder.
   (2) The linked objects of a document cannot be shared among applications for the sake of security.
   (3) If the linked objects of a document are updated, the document will automatically reflect the changes.
   A. (3) only
   B. (1) and (2) only
   C. (2) and (3) only
   D. (1), (2) and (3)

3. Each of the following strings is stored in a separate text file:
   (1) 倚天屠龍記！
   (2) ＳＷＯṘＤ？
   (3) 25702491
   (4) REDWINE
   If Big-5 character encoding system is used, which of the following file size comparisons is correct?
   A. (1) > (2)
   B. (1) > (3)
   C. (4) > (1)
   D. (4) > (3)

4. A computer has received the following data correctly from another computer via a network. Parity check is implemented and the parity bit is transmitted as the last bit.

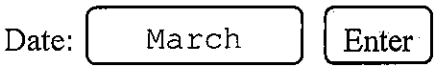
```
10110011
```

If the same parity check is applied to the subsequent transmissions, which of the following data is transmitted incorrectly?

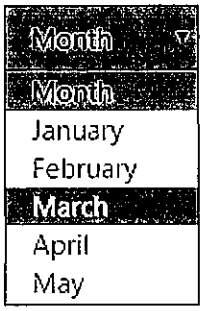
A. `00011111`
B. `10010010`
C. `10011011`
D. `00110101`

5. A web page asks users to input his/her month of birth. The following methods can be used:

Method 1



Method 2



What are the advantages of Method 2 over Method 1?

(1) It is unlikely that users will enter invalid data.
(2) Client-side scripts can be used to detect input errors.
(3) It will be easier for users to enter data.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

6. Susan wants to share some documents with her friends via the Internet. The documents are grouped by type and saved into different folders with meaningful names on her computer. She compresses all the folders into a single file. What are the advantages of sharing the compressed file instead of individual files?

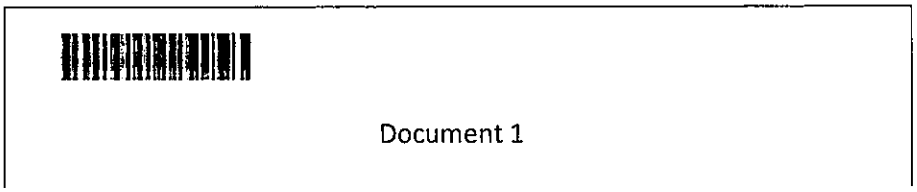
(1) The file size of the compressed file is smaller than the sum of file sizes of all the individual files.
(2) The compressed file can be encrypted.
(3) The type of each file can be easily found out from its folder name.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

7. A supermarket contains 100,000 items, each with a unique item number. The manager wants to attach a radio-frequency identification (RFID) tag to each item. Which of the following is the minimum data size that can accommodate the item number?

A. 1 byte
B. 2 bytes
C. 3 bytes
D. 4 bytes

8. A company wants to digitize all the paper documents in PDF format. A unique bar code will be stuck on the top margin of each paper document. Which of the following is/are the major advantage(s)?



(1) It is easier for users to retrieve a specific digital document.
(2) The digitized documents can be duplicated much more efficiently.
(3) Much less space is required to store digital documents.

A. (2) only
B. (3) only
C. (1) and (2) only
D. (1), (2) and (3)

9. Which of the following situations may happen in the Information Age?

(1) People can locate correct information on the Internet easily.

(2) Information can be spread quickly on the Internet.

(3) Everyone can access the information on the Internet easily.

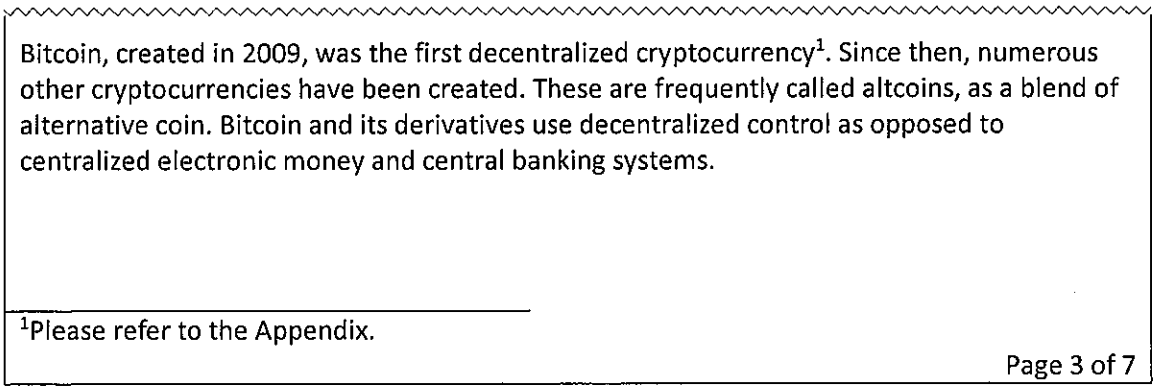
A. (2) only

B. (3) only

C. (1) and (2) only

D. (1), (2) and (3)

10. The following diagram shows the bottom part of a page in a document.



Which of the following word processing technique should be used for the sentence 'Please refer to the Appendix.'?

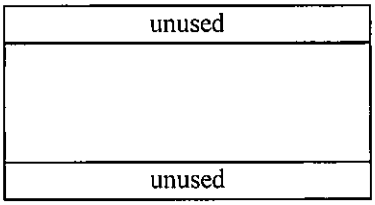
A. Index

B. Subscript

C. Indentation

D. Footnote

11. Peter printed a digital photo on a piece of paper as shown below. The whole paper is not used. Which of the following may be the cause(s)?



(1) The aspect ratio of the digital photo is smaller than that of the photo paper.

(2) $\frac{\text{Height of digital photo}}{\text{Width of digital photo}} < \frac{\text{Height of the photo paper}}{\text{Width of the photo paper}}$

(3) The photo paper is a kind of thermal paper.

A. (1) only
B. (2) only
C. (1) and (3) only
D. (2) and (3) only

12. Mary enters some data on three worksheets of a spreadsheet file. She uses the data to devise some formulae and charts on the worksheets. If some of the data is changed, which of the following statements are correct?

(1) The results of the formulae involved on the same worksheet will be updated automatically.

(2) Adjacent data of the changed data will be updated automatically.

(3) The charts involved on all worksheets will be updated automatically.

(4) The results of the formulae involved on the other worksheets will be updated automatically.

A. (1) and (2) only
B. (1) and (3) only
C. (1), (3) and (4) only
D. (1), (2), (3) and (4)

13. Study the following three SQL statements.

```
SELECT * FROM ORDER
SELECT * FROM ORDER WHERE total < 50
SELECT * FROM ORDER WHERE total > 30
```

Under which of the following conditions will the SQL statements above produce the same result?

(1) `total` is the only field in `ORDER`.

(2) There is no records in `ORDER`.

(3) The values of the field `total` in `ORDER` range from 30 to 50 inclusive.

A. (1) only

B. (2) only

C. (1) and (2) only

D. (2) and (3) only

14. Regarding the spreadsheet and formula below, what is the result of the formula?

	...	P	Q
1	..	Item	Quantity
2	..	Y	20
3	..	Z	10
4	..	Z	0
5	..	Y	15
6	..	Y	5
7	..	Z	25
8	..	Z	15
9	..	Y	10

```
=SUMIF(P2:P8, "Y", Q2:Q8)
```

A. 40

B. 50

C. 80

D. 90

15. Two's complement representation is used in the following binary calculations. Which one will cause an overflow error?

A. `1100 1100 + 1011 0100`

B. `1100 1100 + 1011 0000`

C. `1100 1100 + 1111 1111`

D. `1100 1100 + 0111 1111`

Answer Question 16 and 17 with reference to the following passage.

In a research institute, the researchers access many paper documents frequently. The research institute is going to digitize the paper documents and store the digital versions on a file server so that all researchers can search and read the digital copies through any computers on the network.

16. Why are the digital versions preferable to the original documents?

A. The researchers can spend less time locating specific documents.

B. The researchers can easily duplicate the documents.

C. The intellectual property of the documents can be transferred to another institute more easily.

D. The researchers can easily create a new document.

17. The research institute employs the optical character recognition (OCR) technique during the digitization process. Which of the following properties can highly affect the accuracy of the process?

(1) The compression ratio of the scanned images

(2) The resolution of the scanned images

(3) The dimensions of the original documents

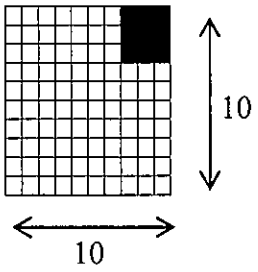
A. (2) only

B. (3) only

C. (1) and (2) only

D. (1), (2) and (3)

18. The resolution of the following black-and-white LED board is 10 × 10. The 9 pixels in the upper right corner are always black. What is the maximum number of patterns that the LED board can show?



A. 2^{91}
B. 2^{9}
C. 91
D. 9

19. Customers can order groceries through an online system. What is the type of this system?
A. Distributed processing system
B. Online interactive system
C. Batch processing system
D. Parallel processing system

20. Why are forms important in a database system?
A. They can store gigantic amount of data.
B. They can create more professional reports.
C. Data can be located faster in a form.
D. They can facilitate data entry.

21. During data input, which of the following can reduce input errors?
(1) Input data twice
(2) Check digit
(3) Two-step verification
A. (1) only
B. (3) only
C. (1) and (2) only
D. (2) and (3) only

22. When Peter plays a first-person shooter computer game on his friend's computer, the game runs much smoother than on his own computer. Which of the following factors may affect the performance of the game?

    (1) The clock rate of the CPU
    (2) The throughput of the hard disk
    (3) The storage size of RAM

    A. (1) only
    B. (2) only
    C. (1) and (3) only
    D. (1), (2) and (3)

23. Which of the following tasks are usually performed by an operating system?

    (1) Managing the main memory for all programs
    (2) Creating pivot tables
    (3) Acting as an interface between applications and computer hardware
    (4) Enabling users to browse web pages

    A. (1) and (3) only
    B. (1) and (4) only
    C. (2) and (3) only
    D. (2) and (4) only

24. Which of the following tasks of a company can be tackled using 'what-if' analysis in spreadsheets?

    (1) Maximizing profits by adjusting combination of products sold to customers
    (2) Minimizing project costs by fine-tuning the allocation of resources
    (3) Finding out all the employees who work over 60 hours per week

    A. (1) only
    B. (2) only
    C. (1) and (2) only
    D. (1), (2) and (3)

25. Cache memory is commonly found in CPUs. Which of the following statements about cache memory is/are correct?

    (1) It is volatile.
    (2) It stores frequently-used data but not recently-used data.
    (3) Its access speed is lower than that of RAM.

    A. (1) only
    B. (1) and (2) only
    C. (2) and (3) only
    D. (1), (2) and (3)

26. If the clock rate of a CPU is 3 GHz, which of the following statements is correct?
    A. The higher the clock rate, the larger the number of clock cycles in a second will be.
    B. The cache memory of the CPU transfers 3×10^9 instructions in a second.
    C. The CPU executes 3×10^9 instructions in a second.
    D. The Control Unit of the CPU uses 3×10^9 clock cycles to execute an instruction.

27. Which of the following is the correct order of the steps of a machine cycle when a CPU is executing an instruction?
    (1) Identifying the operation code and operands of the instruction
    (2) Performing the required operation
    (3) Reading the instruction from RAM
    (4) Storing the result in RAM
    A. (2) → (1) → (3) → (4)
    B. (2) → (3) → (4) → (1)
    C. (3) → (1) → (2) → (4)
    D. (3) → (1) → (4) → (2)

28. The Internet of Things (IoT) refers to the networks of devices that are able to collect, interact and exchange data. The devices can also transmit and receive data through particular servers on the Internet. Which of the following items do the devices usually have?
    (1) A CPU with a high clock rate
    (2) An IP address
    (3) Erasable memory
    (4) A MAC address
    A. (1) and (2) only
    B. (1) and (3) only
    C. (2), (3) and (4) only
    D. (1), (2), (3) and (4)

29. Users can store files into a cloud storage system. When users are offline, they can still access their files. Which of the following is/are the advantage(s) of this feature?
    (1) Users can minimize the amount of data transmitted through the Internet.
    (2) Users can edit the files even when their mobile devices are not connected to the Internet.
    (3) If users delete offline files when their mobile devices are not connected to the Internet, the corresponding files on the cloud storage will also be deleted immediately.
    A. (1) only
    B. (2) only
    C. (1) and (2) only
    D. (1), (2) and (3)

30. Which of the following Internet services is/are provided by the Hong Kong Government?

    (1) Accessing electronic tax accounts
    (2) Renewing driving licences
    (3) Searching for government job vacancies

    A. (1) only
    B. (2) only
    C. (1) and (3) only
    D. (1), (2) and (3)

31. Michelle replaces the hard disk with a solid-state disk (SSD) on a server. Which of the following are the advantages of SSDs?

    (1) More compact
    (2) Less noisy
    (3) Lower energy consumption
    (4) Higher data transmission rate

    A. (2) and (4) only
    B. (3) and (4) only
    C. (2), (3) and (4) only
    D. (1), (2), (3) and (4)

32. Mei Mei receives an email from a friend who attaches a file, meiphotos.exe, in the email. Her friend claims that the file contains some photos of her. Mei Mei tries to execute the file but no photos can be seen. Which of the following is/are probably the reason(s)?

    (1) The original photo files are decompressed in a folder as meiphotos.exe is a compressed file.
    (2) The file contains malware that has infected Mei Mei's computer.
    (3) The photo viewing software has corrupted.

    A. (1) only
    B. (1) and (2) only
    C. (1) and (3) only
    D. (2) and (3) only

33. Which of the following is the major function of a firewall on an enterprise computer network?

    A. Facilitating data transmission between computers
    B. Preventing unauthorized access
    C. Increasing the network bandwidth
    D. Providing email services for users

34. Leo watches a video from a webcasting server that uses streaming technology. The video stops playing for a few seconds occasionally. Which of the following factors may lead to this problem?

    (1) The data transfer rate of the Internet connection
    (2) The bit rate of the video
    (3) The buffer size used for streaming

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

35. Paul wants to know more about cryptocurrency. He has found the following passage through a search engine:

    The first cryptocurrency was created in 1938...

    What should he do afterwards?

    (1) Looking for evidence from other web sites
    (2) Asking different intelligent digital assistants to validate the information
    (3) Copying the passage to the assignment without citing the source

    A. (1) only
    B. (1) and (2) only
    C. (1) and (3) only
    D. (2) and (3) only

36. A web page on a web server contains some images from another server. Apart from the file names of the images, which of the following information should this web page have in order to display these images correctly?

    (1) The IP address of the server hosting the images
    (2) The protocol used to retrieve the images
    (3) The file paths of the images

    A. (1) only
    B. (3) only
    C. (1) and (3) only
    D. (1), (2) and (3)

37. Which of the following pseudocodes produce the same result?

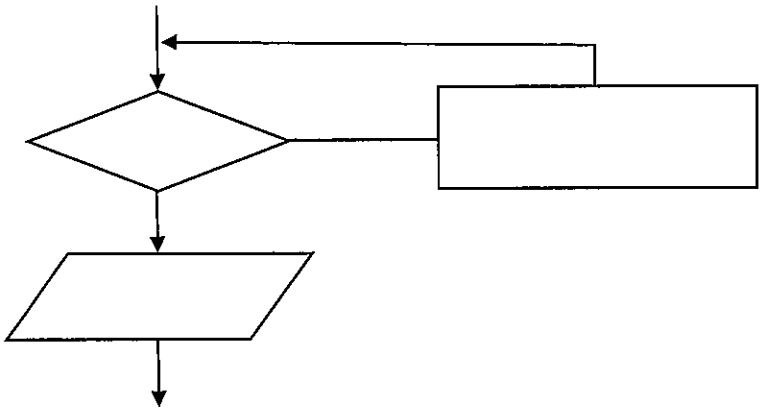
(1)
```
IF A > 5 AND B < 19 THEN
    C ← C + 2
```

(2)
```
IF B < 19 THEN
    IF A > 5 THEN
        C ← C + 2
```

(3)
```
IF A > 5 THEN
    IF B < 19 THEN
        C ← C + 2
```

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

38. What is illustrated by the following flowchart segment?



A. Pretest loop
B. IF...THEN statement
C. Posttest loop
D. REPEAT...UNTIL-loop

39. For the following pseudocode, which of the following sets of P, Q and R will trigger the output of '@@@'?

```
IF ( P > 20 AND NOT( Q OR R ) )
THEN Output '@@@'
```

	P	Q	R
A.	10	TRUE	TRUE
B.	20	FALSE	FALSE
C.	30	FALSE	FALSE
D.	40	FALSE	TRUE

40. What will be displayed if AMT is an integer array in the following pseudocode?

```
J ← 1
While J <= 100 do
    AMT[J] ← J x J - 1
    J ← J + 1
Output (AMT[4] + AMT[5])
```

A. 23
B. 39
C. 48
D. 59

END OF PAPER

BAFS HKDSE 2019 Paper 1 S6 BAFS (Acct)

SECTION A (60 marks)

There are 30 questions in this section. Answer ALL question. Choose the best answer for each question.

1. Which of the following is/are difference(s) between a sole proprietorship and a general partnership?

	Sole proprietorship	General partnership
(1) decision-making process	shorter	longer
(2) profits tax rate	lower	higher
(3) liability borne	unlimited	limited

A. (1) only
B. (1) and (2) only
C. (2) and (3) only
D. (1), (2) and (3)

2. According to accounting assumptions, principles and conventions, which of the following accounting treatments is correct?

A. A sole proprietor records his own rental expenses in the books of the firm.
B. Mr Chan owns three firms. He keeps separate accounting records for each firm.
C. All assets are valued at current market price if a business is expected to cease operating in the following month.
D. Once an accounting method has been adopted, the method should not be changed unless the new method leads to a higher profit.

3. Which of the following statements about 'management by objectives' are correct?
(1) It can enhance staff morale.
(2) It can facilitate communication between superiors and subordinates.
(3) It allows superiors to focus on more important tasks.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

4. The following account was extracted from the books of Lee's firm:

Mr Au

2018		$	2018		$
Oct 14	Cash	22 000	Oct 1	Balance b/d	10 000
Oct 31	Balance c/d	44 000	Oct 5	Purchases	56 000
		66 000			66 000

Based on the information in the above account, which of the following statements is not correct?

A. Lee's firm owed Mr Au $10 000 on 1 October 2018.
B. Mr Au sold goods for $56 000 on credit to Lee's firm on 5 October 2018
C. Lee's firm received $22 000 in cash from Mr Au on 14 October 2018.
D. The account has a credit balance as at 31 October 2018.

5. Which of the following descriptions about the Hong Kong economy is/are correct?
   (1) a sales tax is imposed on the retailing of goods
   (2) most of the working population are in the tertiary sector
   (3) the main destination of exported goods is the Mainland

   A. (1) only
   B. (2) only
   C. (1) and (3) only
   D. (2) and (3) only

6. A firm acquired a set of equipment with a list price of $200 000. The owner paid $50 000 by personal cheque and the remaining amount was to be settled later on. Which of the following are the effects of this transaction on the accounting equation?

	Assets	Capital	Liabilities
A.	increase	increases	decrease
B.	increase	increases	increase
C.	increase	decreases	increase
D.	decrease	unchanged	decrease

7. A company is going to launch a new product in the market. Its Finance Manager is responsible for _____.
   (1) Setting the price of the new product
   (2) Seeking funds to launch the new product
   (3) Preparing budgets for the new product

   A. (1) and (2) only
   B. (1) and (3) only
   C. (2) and (3) only
   D. (1), (2) and (3)

8. Paul has taken out a 3-year personal loan of $100 000 at an annual interest rate of 12%, compounded monthly. Which of the following statements is/are correct?
   (1) The annual nominal interest rate of the loan is 12%.
   (2) The annual effective interest rate of the loan is higher than 12%.
   (3) In general, the interest rate for a personal loan is lower than that for a credit card.

   A. (1) only
   B. (1) and (2) only
   C. (2) and (3) only
   D. (1), (2) and (3)

9. Which of the following statements about business ethics is/are correct?
   (1) Business actions that are legally acceptable may be unethical.
   (2) A 'code of ethics' is compiled by the government for businesses.
   (3) Business ethics are a set of clearly-defined moral principles and standards that a business should follow.

   A. (1) only
   B. (2) only
   C. (1) and (3) only
   D. (2) and (3) only

10. On 31 December 2018, the quick ratio of a firm was 0.8:1. On that date, the account balances of the firm were as follows:

	$
Inventory	6 000
Bank loan (repayable in April 2019)	10 000
Cash	30 000
Trade payables	50 000

Based on the above information, calculate the amount of trade receivables as at 31 December 2018.

A. $4 000
B. $10 000
C. $12 000
D. $18 000

11. Which of the following statements about joint ventures is/are correct?
(1) The business risk is shared by the joint venture partners.
(2) The joint venture will normally be dissolved when the joint project is completed.
(3) A joint venture is a new business entity formed by at least two businesses.

A. (1) only
B. (1) and (2) only
C. (2) and (3) only
D. (1), (2) and (3)

12. Which of the following will decrease the total amount of current liabilities of a business?
(1) some unpaid goods are returned to the supplier
(2) trade payables are repaid using a bank overdraft facility
(3) a 6-month loan is repaid by taking out a 3-year bank loan

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

13. Which of the following statements about small and medium enterprises (SMEs) in Hong Kong is/are correct?
(1) The number of employees accounts for around 80% of total employment (excluding civil service) in Hong Kong.
(2) They can operate as a limited company.
(3) The annual sales revenue of a SME must be below $5 million.

A. (1) only
B. (2) only
C. (1) and (3) only
D. (2) and (3) only

14. For a sole proprietorship selling office equipment, which of the following about its statement of financial position is correct?

A. Office equipment held for sale should be classified as a current asset.
B. The statement shows details of the transactions made during the year.
C. The statement shows the balances of the nominal accounts and real accounts of the firm.
D. Working capital is the difference between non-current assets and non-current liabilities.

15. Which of the following statements about the basic requirements for new applicants of listing on the Main Board is/are correct?
(1) Applicants must fulfil the requirement in operating history.
(2) Applicants must be multinational corporations.
(3) Applicants must meet one of the following criteria: the profit test, the market capitalization/revenue test, or the market capitalization/revenue/cash flow test.

A. (1) only
B. (2) only
C. (1) and (3) only
D. (1), (2) and (3)

16. A firm was set up in January 2018. The following account balances were extracted from its books as at 31 December 2018:

	$
Sales	154 000
Purchases	51 000
Carriage outwards	2 500
Carriage inwards	4 700
Salaries	31 000

The inventory as at 31 December 2018 amounted to $7 200. The gross profit for the year ended 31 December 2018 was _____.

A. $72 000
B. $105 500
C. $107 700
D. $114 900

17. Which of the following is/are regarded as example(s) of a hotel fulfilling its social responsibilities?
(1) allowing clerical staff to work from home when there are adverse weather conditions
(2) paying the minimum wage to housekeepers
(3) serving sharks fins if requested by customers

A. (1) only
B. (1) and (2) only
C. (2) and (3) only
D. (1), (2) and (3)

18. Tracy, aged 35, set up a dessert shop as a sole proprietor in 2015. Since then, she has employed Betty, aged 30, as a part-time helper at a monthly salary of $5 000. Which of the following statements about the Mandatory Provident Fund (MPF) Scheme is/are correct?
    (1) Tracy needs to enrol herself into an MPF scheme.
    (2) Tracy needs to enrol Betty into an MPF scheme and make mandatory contributions for her.
    (3) Betty needs to make mandatory contributions to the MPF Scheme.

    A. (1) only
    B. (1) and (2) only
    C. (2) and (3) only
    D. (1), (2) and (3)

19. Which of the following double entries are correct?

	Transaction	Account to be debited	Account to be credited
(1)	Credit customers returned goods to the firm.	Sales	Trade receivables
(2)	A bank loan was settled by cheque.	Loan from bank	Cash at bank
(3)	A cash refund for the overpayment of motor expenses was received.	Cash	Motor expenses

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

20. Which of the following statements about the risks and returns of investments is/are correct?
    (1) Investing in stocks of companies from different industries can diversify firm-specific risk.
    (2) Making a deposit into a savings account is risk free.
    (3) Investors can get capital gains and dividends as returns for investing in bonds.

    A. (1) only
    B. (1) and (2) only
    C. (2) and (3) only
    D. (1), (2) and (3)

21. Which of the following statements about entrepreneurs are correct?
    (1) They are willing to take on challenges.
    (2) They promote economic growth by creating job opportunities.
    (3) They promote market competition by introducing new products and services.

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

22. Which of the following statements about the World Trade Organization are correct?
    (1) It settles trade disputes among members.
    (2) It provides forums for trade negotiations among members.
    (3) It provides financial assistance to developing countries for trade development.

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

23. In the accounting cycle, the next step after posting entries to the ledger accounts is _____.

    A. preparing financial statements
    B. recording transactions in the books of original entries
    C. preparing the trial balance
    D. making period-end adjustments

24. Which of the following statements about the Hang Seng Index is correct?

    A. It is composed of 60 constituent stocks.
    B. All of its constituent stocks are listed on the Main Board of the Stock Exchange of Hong Kong.
    C. It reflects the performance of the stock market in the Asia-Pacific region.
    D. 'Information technology' is one of the four sub-indexes.

25. Which of the following is not the main use of financial statements for the respective users?

	User	Main use
A.	employees	to assess the prospects of the company
B.	managers	to evaluate the financial performance of the company
C.	government	to compute the profits tax payable by the company
D.	customers	to assess the liquidity of the company

26. Which of the following statements about credit cards are correct?
    (1) They have a pre-approved credit limit.
    (2) They have a payment due date.
    (3) There is a monthly minimum payment for the outstanding balance.

    A. (1) and (2) only
    B. (1) and (3) only
    C. (2) and (3) only
    D. (1), (2) and (3)

27. A manager compares the actual performance of the staff with the performance standard. Which of the following management functions does the task belong to?

    A. leading
    B. organizing
    C. planning
    D. controlling

28. The following is a list of the account balances in the trial balance of a firm as at 31 December 2018:

	$
Purchases	74 000
Inventory, 1 January 2018	6 200
Cash at bank	121 500
Loan from bank	36 700
Office equipment	15 000
Sales	123 000
Operating expenses	28 000
Drawings	14 700
Capital, 1 January 2018	?

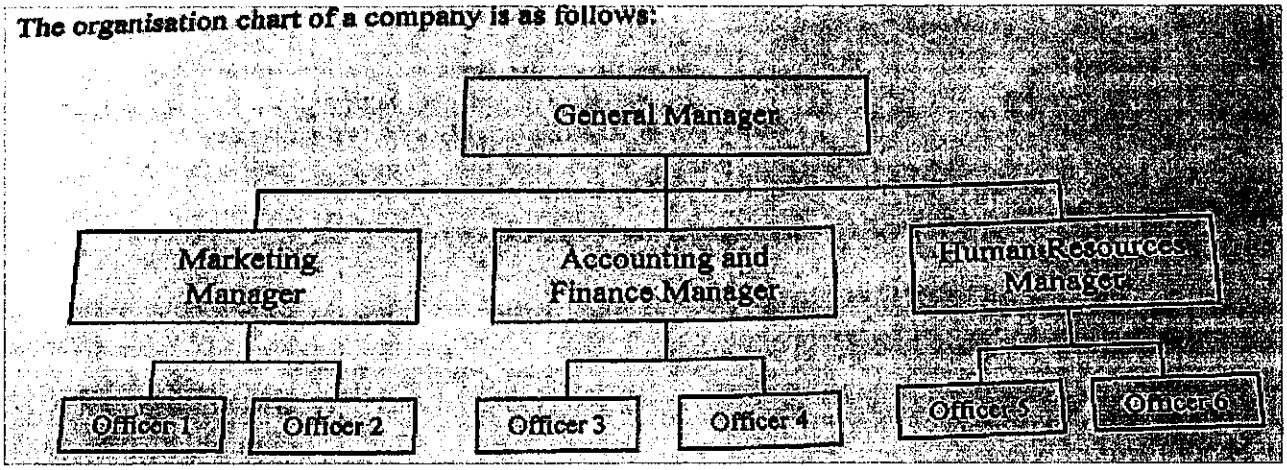
The firm's capital as at 1 January 2018 was_____.

A. $43 700
B. $70 300
C. $99 700
D. $197 700

29. On 1 April 2019, Yan deposited $3 000 into a savings plan with an interest rate of 1% per year, compounded annually. If Yan deposits the same amount into the savings plan on 1 April every year what is the account balance of Yan's savings plan as at 31 March 2022?

A. $3 091
B. $9 090
C. $9 181
D. $9 273

30. **The organisation chart of a company is as follows:**



Which of the following statements are correct?

(1) The company is departmentalized by function.
(2) The span of control of the General Manager is nine.
(3) The General Manager has line authority over the Marketing Manager.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

END OF SECTION A

SECTION B (30 marks)

Part 1 (20 marks) Answer ALL question in the part.

1. Pizza Deli is a multinational corporation founded in Italy and has branches in London and Sydney. It is considering expanding to Asia by setting up its own branch in Hong Kong. A reputable restaurant chain in Hong Kong invited Pizza Deli to join them as a franchisee.

   (a) Describe the main feature of Pizza Deli as a multinational corporation. (2 marks)
   (b) Explain to Pizza Deli two disadvantages of joining the restaurant chain as a franchisee instead setting up its own branch. (4 marks)

2. (a) Johnny has just graduated from university. His teacher reminded him to maintain a good personal credit record.

   Give two factors which could affect Johnny's personal credit record. Explain how each of the factors would affect his personal credit record. (4 marks)

   (b) In 2019, Johnny established a firm selling cooking utensils in Hong Kong, with the following goal:

   'All Hong Kong people will know our brand name by the end of 2020.'

   The above goal is not a SMART goal. Explain two SMART goal characteristics that are not demonstrated by this goal. (4 marks)

3. On 1 December 2018, Chung's firm purchased goods for $5 000 by cheque.

   On 22 December 2018, Chung's firm sold goods to a new customer, Jacky, on credit for $8 000. A 5% discount would be offered to customers if the settlements were made within 10 days after purchase. Jacky settled the account by cheque on 30 December 2018.

   With reference to the accounts listed below,

   - Purchases account
   - Sales account
   - Jacky account
   - Cash at bank account
   - Discounts received account
   - Discounts allowed account

   (a) prepare appropriate T-accounts to record the above transactions for Chung's firm. Balancing off the accounts is not required. (4 marks)

   (b) give one example for each of the following types of ledger account:
   (i) real account
   (ii) nominal account (2 marks)

Part 2 (10 marks) Answer ONE question in this part.

Au's firm manufactures and sells garments. The following account balances were extracted from the books of Au's firm as at 31 December 2018:

	$
Sales	2 300 000
Inventory, 31 December 2018	100 000
Gross profit for the year	1 495 000
Net profit for the year	345 000
Capital, 1 January 2018	1 827 500
Machinery	2 182 500
Cash at bank	140 000
Trade payables	250 000

In 2017, the return on capital employed and the current ratio of Au's firm were 25% and 1.4:1 respectively. In 2018, additional capital was not introduced and there were no drawings.

Refer to the information above, answer Question 4 or Question 5.

4. (a) Calculate the following ratios for 2018 for Au's firm (to two decimal places):
   - (i) gross profit ratio (1 mark)
   - (ii) net profit ratio (1 mark)
   - (iii) return on capital employed (2 marks)

   (b) Based on the return on capital employed, briefly comment on the profitability of Au's firm in 2018. (1 mark)

   In the production department of Au's firm, the garment manufacturing process involves many tasks, including cutting, sewing and packaging. Each worker is responsible for one task only.

   (c) State the principle of effective management adopted in the production department. (1 mark)
   (d) Explain two advantages for the production department of adopting the principle of effective management in (c) above. (4 marks)

   (Total: 10 marks)

5. (a) Prepare a statement of financial position for Au's firm as at 31 December 2018. (3 marks)
   (b) Based on the current ratio (to two decimal places), briefly comment on the liquidity of Au's firm as at 31 December 2018. (2 marks)

   Ken is the accountant at Au's firm. One day, he asked an accounting clerk, Ming, to prepare a cost analysis and report to him in the afternoon. At the same time, the office manager instructed Ming to compile a filing index in that afternoon.

   (c) State the principle of effective management violated in the above case. (1 mark)
   (d) If the principle of effective management in (c) above was adopted, explain two advantages for Au's firm. (4 marks)

   (Total: 10 marks)

SECTION A (24 marks)

Answer ALL question in this section.

1. Fancy Limited's financial information for 2018 and 2017 is as follows:

	2018
	$
Sales (cash sales $11 600)	298 200
Cost of sales	210 700
Operating expenses	43 600

Balances at 31 December	2018	2017
	$	$
Non-current assets, net	144 800	145 300
Inventory	153 500	86 400
Trade receivables	95 300	58 200
Current liabilities	125 900	70 400
Ordinary share capital	70 000	70 000
Retained profits	124 800	80 900
5% long-term bank loan	95 000	95 000
Cash at bank	22 100	26 400

REQUIRED:

Calculate (to two decimal places) the following ratios for 2018:

(a) inventory turnover (in times)

(b) trade receivables turnover (in times)

(c) total assets turnover (in times)

(d) gearing ratio

(Total: 8 marks)

2. Joey Company's bank statement showed a credit balance of $300 000 as at 31 December 2018, which did not agree with the balance shown in the cash at bank account on that date. The following were subsequently discovered:

   (i) Interest income of $2 400 had been credited by the bank but no entries had been made in the books.
   (ii) The cash at bank account included a debit entry of a post-dated cheque from a credit customer for $3 900
   (iii) A cheque for $6 300, received from a customer, was shown in the debit column of the bank statement and marked as a 'Returned Cheque'.
   (iv) An incorrect credit transfer of $5 200 had been made by the bank on 30 December 2018. Joey Company was informed by the bank that an adjustment would be made in January 2019.
   (v) A cheue payment of $48 000 to a supplier had been recorded as a refund from the supplier in the books.
   (vi) On 31 December 2018, unpresented cheques totalled $61 700 while deposits made but not yet credited by the bank amounted to $23 100.

REQUIRED:

(a) Update the cash at bank account and prepare a bank reconciliation statement as at 31 December 2018. (6 marks)

(b) Give two reasons why a cheque already deposited would be returned by the bank. (2 marks)

(Total: 8 marks)

3. Dragon Limited manufactures three products: A, B and C. The products' financial information is as follows:

	Product		
	A	B	C
	$/unit	$/unit	$/unit
Selling price	365	390	225
Production costs			
- Direct materials	80.5	95.0	45.5
- Direct labour	60.5	61.0	40.0
- Variable manufacturing overheads	24.0	24.5	20.5
- Fixed manufacturing overheads absorbed	55.0	88.0	33.0
Variable selling and administrative expenses	21.5	21.5	21.5

Dragon Limited has a maximum of 20 000 machine hours available each year. The total fixed manufacturing overheads are $440 000 per year, which are absorbed on the basis of machine hours.

REQUIRED:

(a) Calculate the contribution margin per unit for products A, B and C respectively. (2 marks)

(b) Calculate the number of machine hours required to produce each unit of products A, B and C respectively. (2 marks)

(c) Suppose the projected demand for products A, B and C in the following year is 4 500 units, 2 500 units and 4 300 units respectively. State the production quantity of each product in the following year which will maximise the total contribution of Dragon Limited at its full capacity. Support your answer with calculations. (4 marks)

(Total: 8 marks)

SECTION B (36 marks)

Answer ALL question in this section.

4. Below is the trial balance of Tracy Limited as at 31 December 2018:

	Dr	Cr
	$	$
Ordinary share capital		2 465 000
Equipment	3 360 000	
Accumulated depreciation - equipment, 1 January 2018		1 160 000
Inventory, 1 January 2018	344 000	
Trade receivables and trade payables	136 000	
Cash at bank	409 000	
Purchases and sales	2 130 000	3 254 000
Gain on disposal of short-term investments		134 000
Debenture interest	12 000	
Administrative expenses	408 370	
Selling and distribution expenses	457 750	
Retained profits, 1 January 2018		186 370
4% Debentures		600 000
Short-term investments	816 250	
	8 091 370	8 091 370

Additional information:

(i) The value of the closing inventory as at 31 December 2018 was $445 000.
(ii) During the year, the company paid an insurance premium of $36 000 for the year ended 31 March 2019. The whole amount was included in administrative expenses.
(iii) An audit fee of $10 000 and directors' fees of $70 800 for 2018 were to be paid in 2019.
(iv) It is the company's policy to depreciate equipment using straight-line method based on an estimated useful life of 10 years, and to classify the depreciation expenses, audit fee and directors' fees as administrative expenses.
(v) The 4% debentures were issued on 1 May 2018 and the maturity date is 30 April 2020. Debenture interest is payable half-yearly on 30 April and 31 October.
(vi) On 31 December 2018, the board of directors resolved to transfer $40 000 to general reserve.

REQUIRED:

(a) Prepare the income statement for the year ended 31 December 2018. (6 marks)

(b) Prepare the statement of financial position as at 31 December 2018. (7 marks)

5. On 1 January 2018, Mr Lee started City Trading Company. He did not keep proper accounting records for his business but the following information relating to the year 2018 is available:

(i) Information extracted from bank statements for 2018 shows:

		$	$
Collection from customers			782 320
Less:	Drawings by Mr Lee	30 200	
	Payment to suppliers	202 000	
	Payment for operating expenses	223 730	
	Purchase of equipment	80 000	
	Dishonored cheque	28 610	(564 540)
Balance as at 31 December 2018			217 780

(ii) All sales and purchases were made on credit. There were no accounting records for outstanding trade receivables and trade payables. Based on the information confirmed by customers and suppliers, total trade receivables and total trade payables as at 31 December 2018 amounted to $88 100 and $101 680 respectively.

(iii) A cheque for $28 610, received from a customer, was dishonored in late December 2018 but the confirmation from the customer had not been updated accordingly.

(iv) A cheque for $31 080 issued to a supplier in early December 2018 had neither been presented for payment nor updated by the supplier.

(v) The residual value of the equipment is $5 000. Depreciation of 10% per annum is to be provided on equipment using the reducing-balance method. A full year's depreciation is to be provided in the year of acquisition.

(vi) All goods were sold at a mark-up of 110%. During the year, Mr Lee had taken goods at an invoiced price of $17 640 for his personal use.

REQUIRED:

(a) Based on the above information, prepare separate statements to calculate the following items:

(i) sales for the year 2018 (2 marks)

(ii) purchases for the year 2018 (2 marks)

(iii) net book value of equipment as at 31 December 2018 (2 marks)

(iv) drawings by Mr Lee during 2018 (2 marks)

(b) With reference to a relevant accounting principle or concept, explain why a business has to provide depreciation for equipment. (3 marks)

(Total: 11 marks)

6. Owen Limited produces electrical appliances. Total production Overheads are absorbed based on production quantity.

Sales and cost information for the quarter ended 31 December 2018 is given below:

		$	$
Sales			1 800 000
Less:	Direct materials	800 000	
	Direct labour	250 000	
	Production overheads - fixed	190 000	
	- variable	156 000	
	Administrative expenses - fixed	139 400	
	Selling and distribution expenses - fixed	90 000	(1 625 400)
Net profit			174 600

The company did not keep any inventory as at 31 December 2018.

REQUIRED:

(a) Calculate the following for the quarter ended 31 December 2018:

(i) contribution margin ratio (2 marks)

(ii) the sales amount at which the company will achieve a quarterly profit of $300 000 (3 marks)

During the quarter ended 31 March 2019, the following changes took place:

(i) the selling price was reduced by 5%
(ii) sales volume increased by 20%
(iii) production volume increased by 30%
(iv) fixed production overheads increased to $210 000
(v) fixed selling and distribution expenses increased by $10 000
(vi) through bulk purchase, the direct materials unit price decreased by 8%

The hourly rate of direct labour, the variable production overheads per unit and the five expenses remained unchanged.

REQUIRED:

(b) Prepare the income statement for the quarter ended 31 March 2019 using the marginal costing system. (5 marks)

(c) Give one advantage of adopting marginal costing system. (2 marks)

(Total: 12 marks)

SECTION C (20 marks)

Answer ONE question in this section.

7. Ron, Ann and Ben had been in partnership for many years sharing profits and losses in the ratio of 2:2:1. The account balances of the partnership as at 31 December 2018 are as follows:

	$
Property, net	1 000 000
Equipment, net	360 000
Motor vans, net	574 000
Inventory	283 000
Trade receivables	240 000
Trade payables	88 000
Capital - Ron	1 160 000
- Ann	798 000
- Ben	698 000
Cash at bank	287 000

On 1 January 2019, Ron retired and Carol was admitted into the partnership with the following arrangements:

(i) The property was to be revalued upwards by $346 000 while the motor vans were to be revalued at $390 000.
(ii) An allowance for doubtful debts of $42 000 was to be made. A bad debt recovery of $2 000 would be collected in early 2019.
(iii) Goodwill was valued at $180 000 but it was not to be maintained in the books. Adjustments for goodwill between partners were to be made in the capital accounts.
(iv) $900 000 of the amount due to Ron would be left as a half-year loan to the partnership, with an annual interest of 10%. The balance was to be paid on his retirement date.
(v) Carol brought in a piece of equipment valued at $50 000 together with additional funds so that her capital account would have a balance of $700 000.
(vi) The profit-sharing ratio of Ann, Ben and Carol is 3:2:1. Ben is entitled to an annual salary of $30 000 and Carol is guaranteed a share of profits of not less than $50 000 per quarter.

REQUIRED:

(a) Prepare the following to record the retirement of Ron and the admission of Carol:
  (i) the revaluation account (3 marks)
  (ii) the partners' capital accounts in columnar form (6 marks)
  (iii) the statement of financial position for the new partnership as at 1 January 2019 (6 marks)

(b) Suppose the new partnership's net profit before interest for the quarter ended 31 March 2019 was $270 000. Prepare the appropriation account of the new partnership for the quarter ended 31 March 2019. (3 marks)

(c) Give two reasons why a goodwill account is not maintained in the books of a partnership. (2 marks)

(Total: 20 marks)

8. The trial balance of Alison Limited at the financial year end, 31 December 2018, did not agree and the difference was posted to a suspense account.

The following errors were subsequently discovered:

(i) Discounts allowed of $175 had been credited to the discounts received account as $715.
(ii) The purchases day book was overcast by $840
(iii) Accrued salaries of $430 as at 31 December 2017 had not been brought forward as an opening balance in 2018.
(iv) On 30 June 2018, sales proceeds of $7 400 for a piece of office equipment had been recorded as a cash sale. No other entries in respect of this transaction had been made. The office equipment had a cost of $16 300 and an accumulated depreciation of $6 500 on the date of disposal.
(v) Credit purchases of $2 100 had been correctly recorded in the supplier's account, but the corresponding entry had been credited to the returns outwards account as $1 200.
(vi) In October 2018, the company issued ordinary shares of $200 000. Application monies of $280 000 were received and recorded in the share application account. The issuance of shares and the refund of the excess application monies had been properly made on 29 December 2018 but no entries were made in the books.
(vii) The company made a 6% loan of $35 000 to a director on 1 October 2018. However, the loan recorded as a payment to another supplier having the same name.
(viii) A credit sale of $1 180 had been debited to the sales account and credited to the trade receivables account.
(ix) A rental deposit of $17 000 had been paid but no entries were made in the books.

REQUIRED:

(a) Prepare the necessary journal entries to correct the above. Narrations are not required. (13 marks)
(b) Prepare the suspense account to find out the difference as per trial balance. (4 marks)
(c) Identify the type of accounting errors made in (vii), (viii) and (ix) above respectively. (3 marks)

(Total: 20 marks)

END OF PAPER