奧冠教育中心

OLYMPIAD CHAMPION EDUCATION CENTRE

Room 309-310, 8 Jordan Road, Yau Ma Tei, Kowloon, Hong Kong SAR, CHINA

Tel (852) 3153 2028 / 9310 1240 Fax (852) 3153 2074

Website: www.olympiadchampion.com Email: olympiadchampion@gmail.com

香港國際編程競賽初賽 2019 – 2020（香港賽區）

HONG KONG INTERNATIONAL COMPUTATIONAL OLYMPIAD

HEAT ROUND 2019 - 2020 (HONG KONG REGION)

Blocky

時限：60 分鐘

Time allowed: 60 minutes

模擬試題

Mock Paper

考生須知：

Instructions to Contestants:

1. 本卷包括 試題 乙份，試題紙不可取走。
   Each contestant should have ONE Question-Answer Book which CANNOT be taken away.

2. 本卷共 20 題，答對得 2 分，空題得 0 分，**答錯倒扣 1 分。**
   There are a total of 20 questions in this Question-Answer Book. Two points for correct answers. No points for incorrect answers. **ONE penalty point will be deducted for incorrect answers.**

3. 請將答案寫在 答題紙 上。
   All answers should be written on ANSWER SHEET.

4. 比賽期間，小學組不得使用計算工具，**中學組可以使用計算工具。**
   During the contest, NO calculators can be used for PRIMARY GROUP **but calculators can be used for SECONDARY GROUP**.

5. 本卷中所有圖形不一定依比例繪成。
   All figures in the paper are not necessarily drawn to scale.

6. 比賽完畢時，本試題會被收回。
   This Question-Answer Book will be collected at the end of the contest.

本試題不可取走。

THIS Question-Answer Book CANNOT BE TAKEN AWAY.

未得監考官同意，切勿翻閱試題，否則參賽者將有可能被取消資格。

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

DO NOT turn over this Question-Answer Book without approval of the examiner.
Otherwise, contestant may be DISQUALIFIED.

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

選擇題（第 1 至 20 題）（答對得 2 分，空題得 0 分，**答錯倒扣 1 分**）

Multiple Choice Questions (1^{st} ~20^{th}) (Two points for correct answers. No points for incorrect answers. **ONE penalty point will be deducted for incorrect answers.**)

1. Which of the following block categories does not exist in Blocky?

   A. Lists

   B. Loops

   C. Games

   D. Color

   E. None of the above

2. What is Blocky maintained by?

   A. Your school

   B. Youtube

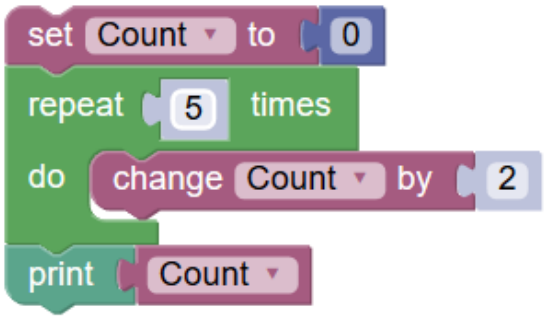
   C. Netflix

   D. Google

   E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

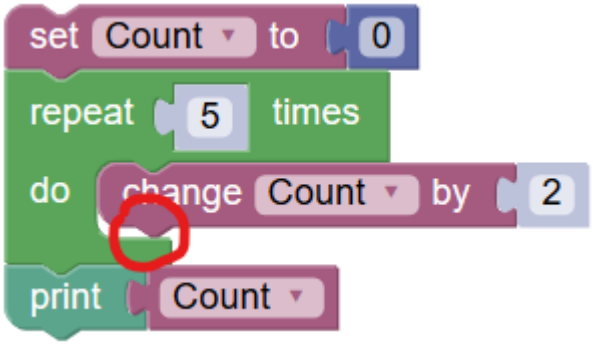
Refer to the following code for question 3 to 5



3. What is the expected output?

   A. 0 B. 2 C. 5 D. 10 E. None of the above

4. What does the gap shown in the red circle below suggest?



   A. More blocks can be filled in place

   B. Blocky has an error

   C. The two blocks doesn't match

   D. Meaningless

   E. None of the above

5. What is "Count"?

   A. Counting how many times the green loop repeats

   B. A variable

   C. 0, it is always 0

   D. Counting how many blocks in the code

   E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

Refer to the following block, and respective code for question 6 to 10

```
1  var list;
2
3
4  list = ['Hey ', 'Are you having fun ', 'with Blocky?'];
5  window.alert(list[1].length);
```

6. Is the following list the same as the above? If not, where is the difference?

A. Yes, they are the same

B. No, this list has only one element

C. No, this list contains more text blocks

D. No, this list does not have print

E. None of the above

7. What is the message in “window.alert”? (It is equivalent to the content of print)

A. Hey B. 2 C. 3 D. 19 E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

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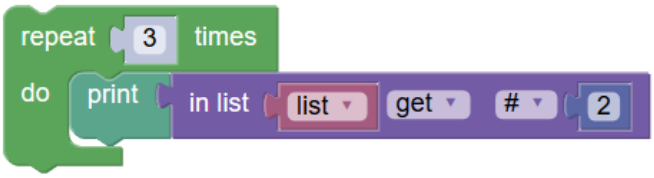
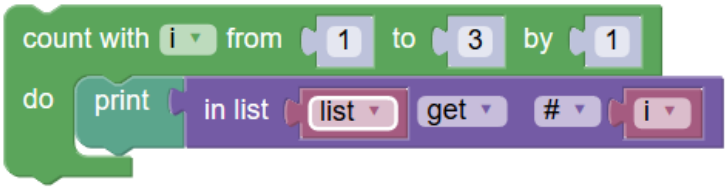
8. Which of the following code can print all of the values of the list in a single line?

A.



B.

C.



D.

E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

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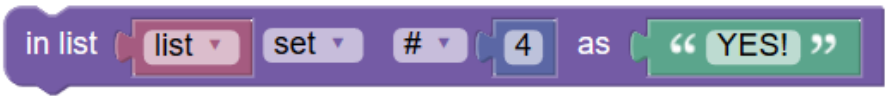
9. Continuing on question 8, What is the line of output if the following block is added before printing?



A. Hey Are you having fun with Blocky? YES!

B. Hey Are you having fun YES!

C. Hey Are you having fun with Blocky? YES!

D. Hey Are you having fun with Blocky? 3 YES

E. None of the above

10. What is the value of the block?

A. Hey B. 0 C. 4 D. Are you having fun E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

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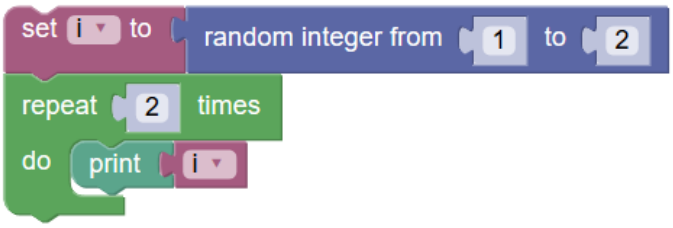
11. What would be printed? Why?

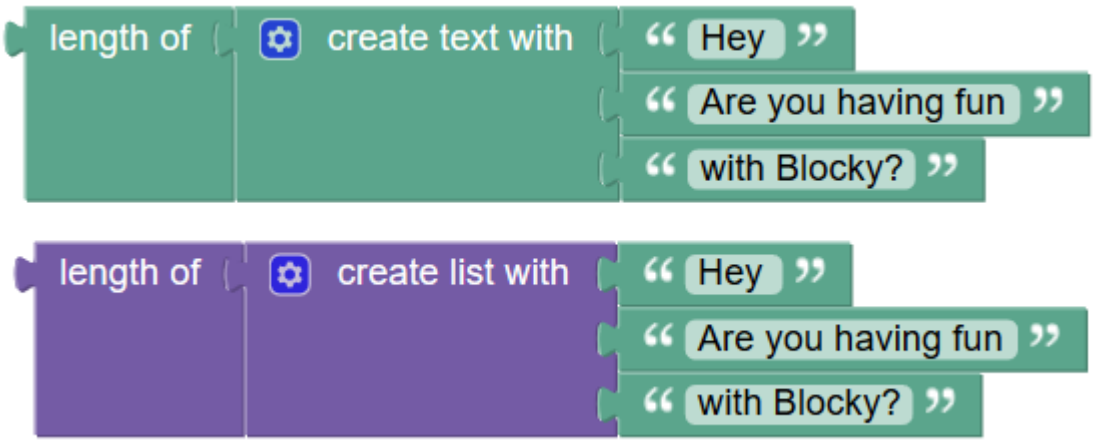
A. false, because nothing would equal to a random integer
B. false, because random integer from 3 to 3 would cause error
C. true, because length of abc is 3
D. true, because length of string equals to a number in every condition
E. None of the above

12. Refer to the following code, the first line of output is 2



What is the second line of output? Why?
A. 好似漏咗啲野._. Because random integer would not repeat
B. Undetermined because random integer cannot be predicted (easily)
C. 2 because i is 2
D. 2 because this is the second time the loop repeats
E. None of the above

13. Is the value of the following two blocks equivalent? Why?



A. Yes, they are both 3
B. Yes, they have the same content
C. No, length of a list would never equal to length of a text
D. No, length of list is 3 but length of text does not equal to 3
E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

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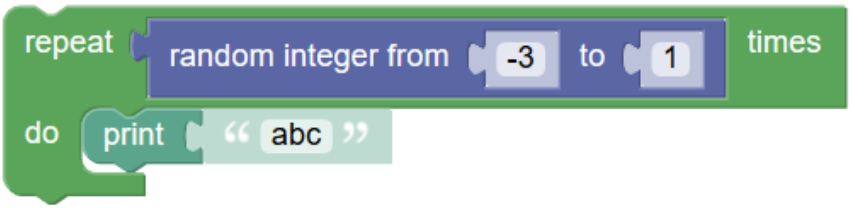
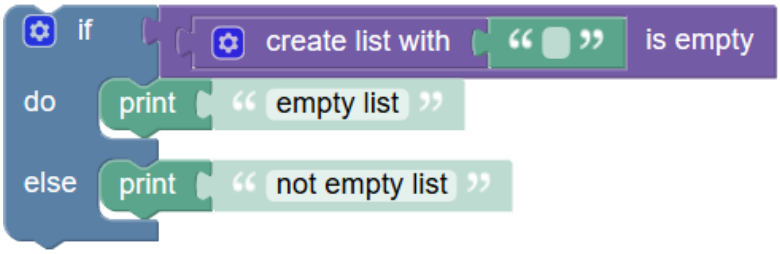
14. The following code is executed but there is no output, why?



A. Picking random integer from a negative range causes error in Blocky
B. The content for printing is not defined
C. Repeat 1 time is never happening because “random integer from -3 to 1” is exclusive
D. Value smaller than 1 is picked
E. None of the above

15. What would be printed with the following code executed?



A. Empty list
B. Not empty list
C. Undetermined because value of list is unknown
D. Nothing would be printed
E. None of the above

16. Can

be removed in the following code to get the same result? Why?

A. Yes, if the block can check list’s emptiness directly
B. Yes, list is empty anyway
C. The code produces error because list cannot contain random colour
D. No, because print “a list” does not print the variable “list”
E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

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17. Following is a block and the respective code

```
function colourRgb(r, g, b) {
  r = Math.max(Math.min(Number(r), 100), 0) * 2.55;
  g = Math.max(Math.min(Number(g), 100), 0) * 2.55;
  b = Math.max(Math.min(Number(b), 100), 0) * 2.55;
  r = ('0' + (Math.round(r) || 0).toString(16)).slice(-2);
  g = ('0' + (Math.round(g) || 0).toString(16)).slice(-2);
  b = ('0' + (Math.round(b) || 0).toString(16)).slice(-2);
  return '#' + r + g + b;
}


window.alert(colourRgb(100, 50, 0));
```

What is the output?
A. No output because color cannot be printed
B. 100 50 0
C. #100500
D. #ff7f00
E. None of the above

18. What is expected output of the following block? (Assume the underlying language is Javascript)

A. No output because the list contains elements of different types
B. No output because the list contains expressions
C. 1, 2, 3
D. item 1, 2, 3
E. None of the above

請將答案寫在 答題紙 上。
All answers should be written on the ANSWER SHEET.

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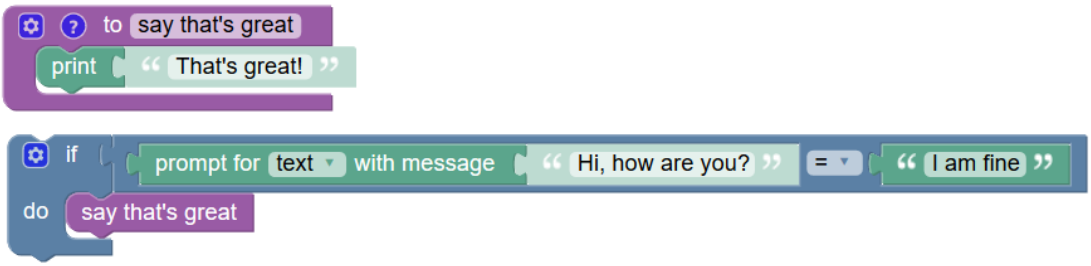
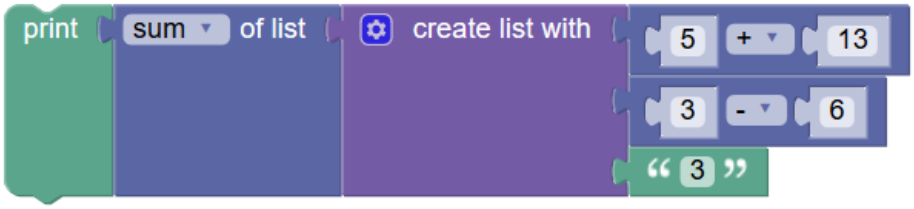
19. Which of the following is a correct description of the code below?



A. User would be prompted with “Hi, how are you?”, if the user replied with “I am fine”, “That’s great” would be printed
B. User would be prompted with “That’s great”, if the user continues to ask “Hi, how are you?”, “I am fine” would be printed.
C. This code produces error because invalid code blocks are used, and the function name cannot contains non-alphabetical symbols too
D. User would be prompted with “Hi, how are you?” and nothing more because ‘=’ cannot be used with string but only with numbers
E. None of the above

20. What is the output of the following code? (Assume the underlying language is Javascript)



A. 13 B. 18 C. 21 D. 153 E. None of the above

~ 全卷完 ~
~ End of Paper ~