

# IDAT

## International Diagnostic & Admissions Test

### PRACTICE TESTS

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WITH ANSWERS

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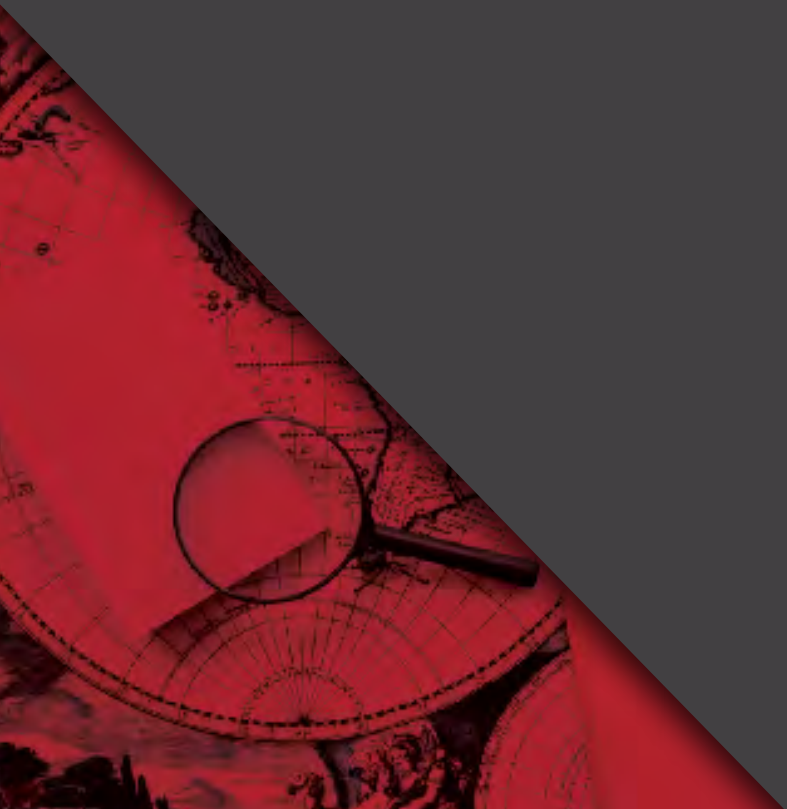
# 2

### STAGE 6

English /

Mathematics /

Global Knowledge /



# STAGE 6

Year 11 - Year 12

SUBJECT	DURATION	TEST COMPONENT	AMOUNT
English	110 mins	Grammar, Vocabulary & Reading (50 mins)	26
		Writing (35 mins)	2
		Interview (25 mins)	10
Math	35 mins	Algebra	2
		Trigonometry — Pythagoras' Theorem & Right-Angled Triangles	2
		Trigonometry — Sine & Cosine Rules	2
		Area of Triangles	2
		Arithmetic Sequence	2
		Geometric Sequence	2
		Binomial Theorem	2
		Real & Complex Numbers / Imaginary Numbers	2
		Complex Conjugates	2
		Operations of Complex Numbers	2
		Matrices	2
		Probability	2
		Trigonometric Functions	2
Global Knowledge	15 mins	Logic — IQ style testing of patterns, space & problem solving.	6
		Science	6
		Technology	6

## Grammar & Vocabulary

1. Choose the correct prefix to complete the sentence.

John was very \_satisfied with the service the company provided.

- A. pre
- B. dis
- C. im
- D. il

2. Choose the correct prefix to complete the sentence.

Differences in leadership styles may lead to \_understanding.

- A. un
- B. dis
- C. pre
- D. mis

3. Choose the correct word/phrase to complete the sentence.

My project completely \_\_\_\_, I couldn't wait to give my presentation.

- A. finish
- B. finishing
- C. finished
- D. was finished

4. Choose the correct word/phrase to complete the sentence.

Bob was the best man for the job; he completed that project all by \_\_\_\_.

- A. him
- B. hisself
- C. himself
- D. his

5. Choose the correct word/phrase to complete the sentence.

\_\_\_\_ then what I know now, I would've acted differently.

- A. Did I know
- B. Had I knew
- C. Had I known
- D. Did I known

6. Choose the correct word/phrase to complete the sentence.

What I wouldn't \_\_\_\_ to be in her position.

- A. giving
- B. give
- C. to give
- D. gave

7. Choose the correct phrase to complete the sentence.

Please do these photocopies if \_\_\_\_\_ the time.

- A. you happen to have
- B. you have happening
- C. you happen
- D. you are happening to have

8. Choose the correct word/phrase to complete the sentence.

I don't know how Pippa knew what happened; she \_\_\_\_\_ the story from Paul.

- A. might have heard
- B. might heard
- C. might hear
- D. might be hear

9. Choose the correct word/phrase to complete the sentence.

No \_\_\_\_\_ my mistake than the phone rang.

- A. sooner did I realised
- B. sooner had I realised
- C. soon did I realise
- D. soon had I realised

10. Choose the correct word/phrase to complete the sentence.

I can't ask any of my friends for help; you know what they're \_\_\_\_.

- A. liking
- B. like
- C. alike
- D. likelihood

11. Choose the correct word/phrase to complete the sentence.

\_\_\_\_ to secrecy, he was allowed to rejoin the group as long as he kept mouth shut.

- A. Swear
- B. Sworn
- C. Swore
- D. Sworen

12. Choose the correct word/phrase to complete the sentence.

The yearbook pictures \_\_\_\_\_ by students and will be printed on Friday.

- A. was selected
- B. have been selected
- C. have selected
- D. were been selected

13. Choose the correct word/phrase to complete the sentence.

In addition \_\_\_\_ the theory classes we have in the mornings, we do some practicals a few afternoons a week.

- A. with
- B. to
- C. like
- D. of

14. Choose the option that has the closest meaning to the underlined word.

The cat had crept in quietly, and we were oblivious to its presence in the room.

- A. aware
- B. unknowing
- C. saddened
- D. delighted

15. Choose the option that has the closest meaning to the underlined word.

An example of decadence is a dessert bar with hundreds of choices of chocolate desserts.

- A. self-indulgent behaviour
- B. polite behaviour
- C. rude behaviour
- D. good behaviour

16. Choose the option that has the closest meaning to the underlined word.

The structure was just under seventy feet long and about twelve feet high, said to be the height designed to accommodate a wagon fully loaded with hay.

- A. limit
- B. contain
- C. block
- D. dissolve

17. Choose the option that has the closest meaning to the underlined word.

Monica was distraught to learn she had been lied to her entire life.

- A. pleased
- B. relieved
- C. tormented
- D. satisfied

## Reading

### *The Art of Racing in the Rain - by Garth Stein*

Gestures are all that I have; sometimes they must be grand in nature. And while I occasionally step over the line and into the world of the melodramatic, it is what I must do in order to communicate clearly and effectively. In order to make my point understood without question. I have no words I can rely on because, much to my dismay, my tongue was designed long and flat and loose, and therefore, is a horribly ineffective tool for pushing food around my mouth while chewing, and an even less effective tool for making clever and complicated polysyllabic sounds that can be linked together to form sentences. And that's why I'm here now waiting for Denny to come home—he should be here soon—lying on the cool tiles of the kitchen floor in a puddle of my own urine.

I'm old. And while I'm very capable of getting older, that's not the way I want to go out. Shot full of pain medication and steroids to reduce the swelling of my joints. Vision fogged with cataracts. Puffy, plasticky packages of Doggie Depends stocked in the pantry. I'm sure Denny would get me one of those little wagons I've seen on the streets, the ones that cradle the hindquarters so a dog can drag his ass behind him when things start to fail. That's humiliating and degrading. I'm not sure if it's worse than dressing up a dog for Halloween, but it's close. He would do it out of love, of course. I'm sure he would keep me alive as long as he possibly could, my body deteriorating, disintegrating around me, dissolving until there's nothing left but my brain floating in a glass jar filled with clear liquid, my eyeballs drifting at the surface and all sorts of cables and tubes feeding what remains. But I don't want to be kept alive. Because I know what's next. I've seen it on TV. A documentary I saw about Mongolia, of all places. It was the best thing I've ever seen on television, other than the 1993 Grand Prix of Europe, of course, the greatest automobile race of all time in which Ayrton Senna proved himself to be a genius in the rain. After the 1993 Grand Prix, the best thing I've ever seen on TV is a documentary that explained everything to me, made it all clear, told the whole truth: when a dog is finished living his lifetimes as a dog, his next incarnation will be as a man.

1. Who is the narrator of this passage?

- A. Denny
- B. A dog
- C. Ayrton Senna

2. What is the main topic of the first paragraph?

- A. The narrator's inability to communicate easily.
- B. How much the narrator loves Denny.
- C. The shape of the narrator's tongue.
- D. The way the narrator eats.

3. And while I'm very capable of getting older, that's not the way I want to go out.

What does go out mean in this sentence?

- A. not stay inside
- B. die

- C. be eliminated from a game
- D. become unfashionable

4. The documentary about Mongolia is the \_\_\_\_.

- A. the best thing the narrator has seen on TV
- B. the second best thing the narrator has seen on TV
- C. the worst thing the narrator has seen on TV
- D. was made in 1993

5. What did the documentary explain to the narrator?

- A. All dogs go to heaven.
- B. Dogs have nine lives.
- C. After death, dogs are reborn as people.
- D. Why Ayrton Senna was such a good racecar driver.

### *The Kite Runner - by Khaled Hosseini*

When we were children, Hassan and I used to climb the poplar trees in the driveway of my father's house and annoy our neighbors by reflecting sunlight into their homes with a shard of mirror. We would sit across from each other on a pair of high branches, our naked feet dangling, our trouser pockets filled with dried mulberries and walnuts. We took turns with the mirror as we ate mulberries, pelted each other with them, giggling, laughing. I can still see Hassan up on that tree, sunlight flickering through the leaves on his almost perfectly round face, a face like a Chinese doll chiseled from hardwood: his flat, broad nose and slanting, narrow eyes like bamboo leaves, eyes that looked, depending on the light, gold, green, even sapphire. I can still see his tiny low-set ears and that pointed stub of a chin, a meaty appendage that looked like it was added as a mere afterthought. And the cleft lip, just left of midline, where the Chinese doll maker's instrument may have slipped, or perhaps he had simply grown tired and careless.

Sometimes, up in those trees, I talked Hassan into firing walnuts with his slingshot at the neighbor's one-eyed German shepherd. Hassan never wanted to, but if I asked, really asked, he wouldn't deny me. Hassan never denied me anything. And he was deadly with his slingshot. Hassan's father, Ali, used to catch us and get mad, or as mad as someone as gentle as Ali could ever get. He would wag his finger and wave us down from the tree. He would take the mirror and tell us what his mother had told him, that the devil shone mirrors too, shone them to distract Muslims during prayer. "And he laughs while he does it," he always added, scowling at his son.

"Yes, Father," Hassan would mumble, looking down at his feet. But he never told on me. Never told that the mirror, like shooting walnuts at the neighbor's dog, was always my idea.

6. What do we learn about Hassan and the narrator in this passage?

- A. They come from China.
- B. Hassan was heavily influenced by the narrator.
- C. Their neighbors grew walnuts in their garden.
- D. They are brothers.

7. What did the boys do with the mirror?

- A. say hi to their neighbors
- B. show their neighbors what they looked like
- C. bother their neighbors
- D. pass mulberries and walnuts to their neighbors

8. Why does the narrator talk about a Chinese doll maker?

- A. He loved dolls.
- B. To describe Hassan's face.
- C. The doll maker was his neighbor.
- D. The doll maker lived with them.

9. Why did Hassan fire walnuts at the neighbor's dog?

- A. He didn't like dogs.
- B. He liked being mean.
- C. He was persuaded to do it.
- D. He wanted to please his dad.

10. How did Hassan's dad react when he caught the boys in the tree with the mirror?

- A. He praised them.
- B. He scolded them.
- C. He punished them.
- D. He hit them.

## Writing

1. Write about the importance of being able to see a situation from another person's point of view. Include ideas from your own experience.

Write at least 7 sentences.

Your answer:

2. Write a story that begins with the sentence "She had promised me that she wouldn't tell anyone, but how else had they found out?"

Write at least 15 sentences.

Organise your ideas into at least 2 paragraphs.

Your answer:

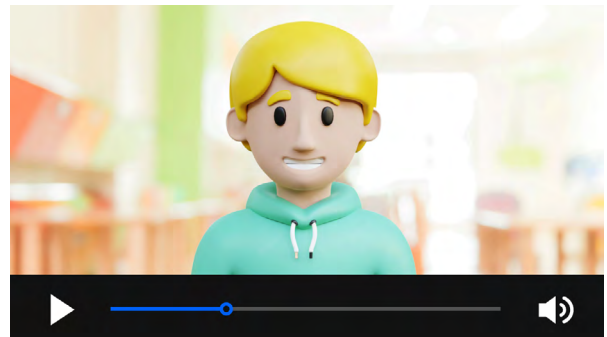
## Interview

The interview is conducted by an avatar and students spoken answers are recorded.

The questions are asked by an avatar. Students can push a button to have the question repeated, asked in another way, or asked more slowly. They can only use each of these buttons once, but it will deduct 1 point each time it is used. The student can take notes on blank paper before speaking but the paper must stay in the room. Students are encouraged not to read off the paper when they speak, as it will not help the student to make eye contact and a good impression. The student presses a button when he or she is prepared to answer, and this will video record their answers. Students are expected to give lengthy answers (limited to 2 minutes per answer) which provide insight into who they are and show the school their speaking and comprehension skills for listening.

When a student has finished recording their answer, they push the button for the next question. No answer or speaking can be erased and tried again. There is one try only.

Prospective or current schools allocated by the student may view this interview with a one-time login password when results are available.



### Sample Questions:

1. Hello, it is a great pleasure to meet you today. Could you please introduce yourself to me?
2. Tell me about your family.
3. What is the biggest challenge at school?
4. If I ask your best friend to describe you, what would he or she tell me about you?
5. In addition to your new classes, what are you looking forward to this year at school?
6. Listen to a story and answer questions.
7. What are your strengths and weaknesses?
8. If you could meet one famous person, who would it be? and Why?
9. How do you think your life would be different when you finish high school?
10. Do you have anything else you would like to tell me?

# / MATHEMATICS

1. Find all solutions.

$$x^2 - x = 12$$

- A.  $x = -6$  or  $x = 0$
- B.  $x = 2$  or  $x = 1$
- C.  $x = 4$  or  $x = -3$
- D.  $x = 1$  or  $x = 7$

2. Find all solutions.

$$x^2 - 6x = -1$$

- A.  $x = 3 \pm \sqrt{8}$
- B.  $x = 1 \pm \sqrt{2}$
- C.  $x = 3 \pm \sqrt{5}$
- D.  $x = 1 \pm 2\sqrt{5}$

3. An office has two envelope stuffing machines. Working together they can stuff a batch of envelopes in 2 hours. Working separately, it will take the second machine 1 hour longer than the first machine to stuff a batch of envelopes. How long does it take the second machine to stuff a batch of envelopes?

- A. 5.2 hours
- B. 3.5 hours
- C. 2.1 hours
- D. 4.6 hours

4. Solve.

$$\log_3(25-x^2) = 2\log_3(25-x^2) = 2$$

- A.  $x = -4$ ,  $x = 4$
- B.  $x = -2$
- C.  $x = 0$ ,  $x = 2$
- D.  $x = 1$ ,  $x = 3$

5. Solve for  $x$  and  $y$ .

$$\begin{aligned} 3x - y &= 7 \\ 2x + 3y &= 1 \end{aligned}$$

- A.  $x = 0$ ,  $y = 1$
- B.  $x = 2$ ,  $y = -1$

$$C. x = -2, y = 1$$

$$D. x = -1, y = 0$$

6. Solve for  $x$  and  $y$ .

$$\begin{aligned} x - y &= 6 \\ -2x + 2y &= 1 \end{aligned}$$

- A.  $x = -3$ ,  $y = 2$
- B.  $x = 1$ ,  $y = -1$
- C.  $x = -2$ ,  $y = 3$
- D.  $x = -4$ ,  $y = 0$
- E. There is no solution.

7. You borrow \$500 from the bank to go on a vacation. The interest rate is 11% for 2 years. How much do you have to pay the bank back at the end of the 2 years?

- A. \$610
- B. \$1,105
- C. \$585
- D. \$720

8. Find the correct answer.

Annual interest rate = 11%  
Period = 3 years  
Total interest = 825 rupees  
What was the initial investment?  
A. 2500 rupees  
B. 1600 rupees  
C. 3100 rupees  
D. 2200 rupees

9. A total of \$6,000 is invested into 2 simple interest accounts. The annual simple interest rate on one account is 9% and the annual simple interest rate on the other account is 6%. How much should be invested into each account so that both accounts earn the same amount of annual interest?

- A. \$2,000 at 9% and \$4,000 at 6%
- B. \$2,400 at 9% and \$3,600 at 6%
- C. \$3,100 at 9% and \$2,900 at 6%
- D. \$2,700 at 9% and \$2,300 at 6%

10. Find the correct answer.

$$(\tan 25^\circ + \tan 50^\circ) \div [1 - (\tan 25^\circ)(\tan 50^\circ)] =$$

- A.  $\sqrt{3} + 2$
- B.  $\sqrt{2}$
- C.  $2\sqrt{3}$
- D.  $\sqrt{3}$

11. From a point 20 m away from the foot of a tower, the angle of elevation to the top of the tower is  $30^\circ$ . What is the height of the tower?

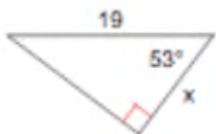
- A. 12.16 m
- B. 10.92 m
- C. 13.41 m
- D. 11.56 m

12. Solve.

$$\sin\left(\theta + \frac{\pi}{18}\right) = 0$$

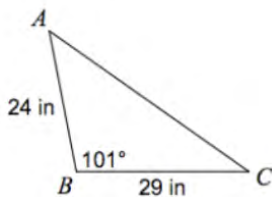
- A.  $\theta = \left\{ \frac{17\pi}{18}, \frac{35\pi}{18} \right\}$
- B.  $\theta = \left\{ \frac{11\pi}{13}, \frac{5\pi}{17} \right\}$
- C.  $\theta = \left\{ \frac{\pi}{3}, \frac{3\pi}{4} \right\}$
- D.  $\theta = \left\{ \frac{9\pi}{11}, \frac{14\pi}{19} \right\}$

13. Use trigonometric ratios to find the missing side of the triangle



- A. 31.6
- B. 11.4
- C. 6.8
- D. 7.8

14. Find the correct answer.



Side BC = \_\_\_\_ in

- A. 42
- B. 41
- C. 46
- D. 45

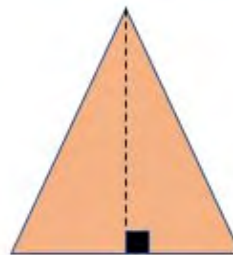
15. If a fair 6-sided die is rolled 20 times, what is the probability that you will get more than 12 even numbers on the 20 rolls?

- A. 0.132
- B. 0.868
- C. 0.285
- D. 0.386

16. How many different committees of 3 people can be chosen to work on a project from 9 people?

- A. 84
- B. 27
- C. 54
- D. 66

17. What is the height of an equilateral triangle with a side length of 16 cm?



- A. 8 cm
- B. 32 cm
- C.  $16\sqrt{3}$  cm
- D.  $8\sqrt{3}$  cm

18. A pyramid shaped roof covers a house which is 36 ft x 36 ft. If the peak of the roof is 10 ft, what is the volume of the attic?

- A.  $4,320 \text{ ft}^2$
- B.  $5,820 \text{ ft}^2$
- C.  $3,980 \text{ ft}^2$
- D.  $4,760 \text{ ft}^2$

19. What shape is created by connecting the points below?

- A (2, -5)
- B (4, 2)
- C (7, 6)
- A. Right Triangle
- B. Isosceles Triangle
- C. Scalene Triangle
- D. Irregular Triangle

20. What is the polar form of the complex number  $-5$ ?

- A.  $-5 (\cos 180^\circ + i \sin 180^\circ)$



- B.  $5(\cos 0^\circ + i \sin 0^\circ)$   
 C.  $5(\cos 180^\circ + i \sin 180^\circ)$

21. Factor  $x^4 - 1$ .

- A.  $(x^2 + 1)(x + 1)(x - 1)$   
 B.  $(x + 2)(x - 2)(x + 2)$   
 C.  $(x + 2)(x - 2i)(x + 2i)$   
 D.  $(x + 2)(x + 2 + 2\sqrt{3}i)(x - 2 - 2\sqrt{3}i)$

22. Solve the inequality.

$$x^2 + 4x + 3 < 0$$

- A.  $-3 < x < -1$   
 B.  $-1 < x$   
 C.  $-3 > x > -1$   
 D. no real solution

23. A sphere has a radius of 6 cm. What is its surface area?

Use 3.14 for pi.

- A. 452.39 cm  
 B. 318.79 cm  
 C. 501.65 cm  
 D. 489.22 cm

24. A cone-shaped punch bowl has a circumference of 9 feet 6 inches and a depth of 2 feet 3 inches. How many gallons can the bowl hold? (Note: 7.48 gal/cubic foot)

- A. 14 gallons  
 B. 40 gallons  
 C. 5 gallons  
 D. 25 gallons

## / GLOBAL KNOWLEDGE

1 Four suspects (A, B, C, and D) were interrogated.

- A said: C won't cheat unless B cheated  
 B said: Either A or B cheated  
 C said: B didn't cheat; I cheated  
 D said: B cheated

Only ONE PERSON is lying. Which of the following is correct?

- A. C lied. B cheated.  
 B. B lied. B cheated.  
 C. A lied. C cheated.  
 D. D lied. C cheated.

2. What is the next number in the sequence?

5, 8, 16, 19, 38, 41, \_\_

- A. 82  
 B. 44  
 C. 84  
 D. 106

3. There are 12 pens on the table. You take 3. How many do you have?

- A. 12  
 B. 9  
 C. 3  
 D. 0

4. Which word is different from the others?

- A. throw  
 B. write  
 C. clap  
 D. kick

5. "ATTRACT" and "REPEL" have \_\_\_\_\_ meanings.

- A. similar  
 B. opposite  
 C. unrelated  
 D. the same

6. If you rearrange the letters "BTIBRA", you get the name of an \_\_\_\_\_.

- A. animal  
 B. job  
 C. month

D. country  
7. Chef is to food as sculptor is to \_\_\_\_\_.

- A. stone
- B. bread
- C. roses
- D. beach

8. Which of these words would you find on a dictionary page between the words "TEASPOON" and "TELEPHONE"?

- A. telescope
- B. tattoo
- C. teenage
- D. temper

9. What number is missing from this sequence?

- 421 = 262  
812 = 892  
632 = 296  
442 = 188  
514 = \_\_\_\_  
A. 564  
B. 356  
C. 456  
D. 465

10. A mountain goat attempts to scale a cliff sixty-feet high. Every minute the goat bounds upwards three feet but slips back two. How long does it take the goat to reach the top?

- A. 58 minutes
- B. 59 minutes
- C. 60 minutes

11. From the North Pole, all directions are \_\_\_\_\_.

- A. south
- B. north
- C. east
- D. west

12. In the North Pole, the one sunrise that happens each year is in \_\_\_\_\_.

- A. winter
- B. June
- C. March
- D. September

13. The latitude of the North Pole is \_\_\_\_\_.

- A. 90 degrees north
- B. 180 degrees north
- C. 90 degrees south
- D. 180 degrees south

14. The exact location of the South Pole is constantly shifting because of \_\_\_\_\_.

- A. Donald Trump
- B. the movement of tectonic plates
- C. politics
- D. varying degrees of temperature

15. What is the base unit of heredity?

- A. Mitochondria
- B. Binary fission
- C. Tectonic plates
- D. Genes

16. Chromosomes are tiny structures made up of DNA and \_\_\_\_\_.

- A. carbohydrates
- B. lipids
- C. proteins
- D. minerals

17. DNA is short for \_\_\_\_\_.

- A. don't need anything
- B. dad's never angry
- C. deoxyribonucleic acid
- D. deoxyribonucleic apples

18. Genes carry DNA and determine \_\_\_\_\_.

- A. what characteristics are inherited from parents
- B. where you will go to school
- C. what time it is
- D. whether people like wearing jeans

# / ANSWER

## ENGLISH

### Grammar & Vocabulary

Question 1-10: BDCCC BAABB

Question 11-17: BBBBA BC

### Reading

Question 1-7: BABBC BCBCB

## MATHEMATICS

Question 1-10: CADAB DAABA

Question 11-20: DABBA ADACC

Question 21-24: AAAB

## GLOBAL KNOWLEDGE

Question 1-10: AACDB AACAA

Question 11-18: ACABD CCA