

## PART A - CHOICE ITEMS

### ACTIVITY 1

Read the text below and respond to the task that follows.

## CINEMA CLASSICS

Monday June 6, 2016

cinemaclaasics.org

### The silent era and the arrival of the talking movies

The breakthrough which enabled film-makers to add sound to moving pictures is undoubtedly one of the major advances in the history of the cinema. But it did not happen overnight. There was no seamless transition from perfect silence to perfect sound. Technicians and practitioners in several countries worked in pretty fierce competition for a number of years to come up with a system to put sound on film which would be both technologically and commercially viable. They believed they had succeeded in the mid to late 1920s but it was still a huge gamble on the part of the film-makers who stood to lose their livelihoods and expensive lifestyles, if the gamble did not pay off.

We should certainly not underestimate just how huge stars of the silent era were, both in terms of adoration amongst cinemagoers and in terms of box office receipts. There was no television and indeed no other form which allowed stars to reach so many millions of people. Everything about the film stars was exaggerated and exotic. By the early 1920s, the motion picture industry was the fifth biggest industry in America.



The stars made money and were always in newspapers and magazines.

However, many of these stars did not have the equipment – the

voice or acting talent– to make a successful transition to the talkies. The film studios subjected their stars to voice tests and some were found wanting.



There were ways to move into talkies which could bring success. The public were kept waiting to hear the voice of screen goddess Greta Garbo and her first talkie in 1930 was given full marketing hype. By this time, the technology had improved somewhat and her voluptuous smoky voice could be heard in all its glory. Charlie Chaplin was another star who did not rush into talkies. His unique style of film was more suited to silents and his combination of talent and business sense assured his continued popularity. When he did eventually speak on film in *Modern Times* in 1936, what he said was deliberately gibberish.

When the talking picture became a reality, some of the silent superstars had already made their fortunes and were content to bow out. Others embraced the new era and made a go of it, while others simply did not have the skills, more particularly the voices, to match their silent personalities. One thing is certain, however, as the cult status of the show *Sunset Boulevard* demonstrates; we continue to be fascinated by the struggles and hopes of these silent kings and queens.

### ATTENTION

- Mark your answers on Answer Sheet 1 [ΑΠΑΝΤΗΤΙΚΟ ΕΝΤΥΠΟ 1].
- You have **120 minutes** to complete this part of the exam.
- Provide a single answer for each item.

Choose the best answer (A, B, or C) for items 1a-5a, on the basis of the text about movies.

- 1a. This article introduces readers to
  - A. the benefits of the arrival of talkies.
  - B. the difficulties directors had with talkies.
  - C. the overall impact of the talkies.
- 2a. The writer implies that the switch from silent to talking movies was
  - A. a perfectly natural development.
  - B. not an easy transition.
  - C. initially hardly noticeable.
- 3a. The stars of the silent screen
  - A. were dismissed at once.
  - B. remained anonymous.
  - C. were revered by the public.
- 4a. Some actors that were megastars in the silent movies
  - A. became legends in the talkies too.
  - B. made a fortune when they starred in talkies.
  - C. abandoned the acting career when talkies arrived.
- 5a. The silent movie stars
  - A. have long been forgotten.
  - B. will always be remembered.
  - C. were offered new contracts.

**ACTIVITY 2**

Read extracts 6a-10a. Match them with the book titles and their subjects, options A-F. Use each option only once. There is one option you do not need.

A.	From a review (in <i>The Observer</i> )	B.	From a science report
C.	Small ad (in <i>Time Out</i> magazine)	D.	From a physical fitness leaflet
E.	From the <i>Essentials of First-Aid</i>	F.	From a letter addressed to a problem page.

6a.	Mammals, according to professor Morgan, do not usually break into a run or trot until the Froude number reaches a specific value (0.6) and the stride length is twice the leg length.	
7a.	OBJECTIVE criticism wanted. I am an unheard of writer. I want to be heard. If you would like to criticise or commission any of my work, please contact. Box No. 123.	
8a.	Useless to pretend that cinema-going last week was anything but a pain in the neck, and a sweat in most other parts. It was hot in London. You could drink a bar of chocolate and draw pop-corn from its bag in one great encrusted lump. Air conditioned for the umpteenth time, came and lapped round you, as if asking to be let out. But at least the films were short.	
9a.	My husband is a good, kind, generous man, but he seems unable to trust me out of his sight. If I plan to go shopping alone, he makes some excuse to come too. He's a very keen fisherman, but he refuses to go unless I absolutely promise to stay at home. As I like him to have a hobby, I agree but even then he tells me he may ring up while he's out – though in fact he rarely does...	
10a.	Drop to half crouch position with hands on knees and arms straight. Keep back as straight as possible, one foot slightly ahead of the other. Jump to upright position with body straight and feet leaving the floor. Reverse position of the feet before landing, return to half crouch, and repeat.	

**ACTIVITY 3**

3.1 Read the text below and choose the best answer (A, B, or C) for item 11a.

11a. The figure of speech in the title of this article implies that ethnic dialects

- A. are strong enough to survive over the years.      B. may die out over a long period of time.      C. have to struggle to keep their purity.

The screenshot shows a web browser window with the URL www.ekathimerini.com. The page features a navigation bar with categories like NEWS, BUSINESS, COMMENT, LIFE, WHAT'S ON, SPORTS, COMMUNITY, SURVIVAL GUIDE, SPECIAL REPORT, and MULTIMEDIA. The main article title is "Dialects put up a battle against the test of time". The article text is as follows:

The community of Hamidie lies on the border between Syria and Lebanon. At the end of the 1990s, Professor Roula Tsokalidou of the Aristotle University of Thessaloniki went there to study the grecophone peoples of the Middle East.

Upon arrival, and before she could finish her question, in broken Arabic, as to where to start looking, a café owner turned to a youth and called out in perfect Greek, "Where is your father, young man?"

Actually, it is easier to hear pure Cretan in this part of the Middle East than on the island of Crete itself. The Cretan dialect, along with Pontic and Cypriot, are the three purely Greek dialects that have withstood the test of time throughout the Hellenic world.

Although dialects (as well as languages in the world) are declining, they have managed to survive in environments where they are in constant contact with other languages and cultures, according to three university surveys on the Greek language and its dialects, published last week by the University of Thessaloniki.

The survival of Cretan in Hamidie is a result of the people's need to preserve their particular identity, according to the survey. "If they didn't, they would feel they had lost a large part of themselves" claims Prof. Roula Tsokalidou. In Syria and Lebanon, fifth and sixth-generation Cretans whose ancestors had converted to Islam and were exiled from the island, still speak Greek and improvise traditional Cretan songs, called 'mantinades', though they have never visited the island itself, or gone to a Greek language school.

Three thousand residents of Hamidie (of the 5,000 in Syria) and another 7,000 in Lebanon are nevertheless passing on the Greek language, highlighting the inter-dependency of language, society and identity. "When our ancestors came here, they didn't know any other language but Cretan," Talb, a 50-year-old Cretan from Lebanon told Prof. Tsokalidou.

The Pontic dialect spoken by ethnic Greeks of the Black Sea coast has survived for the past 80 years in Greece and today it is spoken by about 500,000 residents of 300 villages, most of them in northern Greece. Although modern Greek is now spoken within the Pontic communities, the language of communication at weddings, baptisms and in storytelling is still Pontic. A further defence against extinction was the influx of ethnic Greek refugees from the former Soviet Union.

@ekathimerini, 15 may 2008

**3.2 Choose the best answer (A, B, or C) for items 12a-15a, with reference to the text about dialects.**

- 12a.** This article is about Prof. Roula Tsokalidou's  
 A. research into dialects.      B. travel experiences.      C. university studies.
- 13a.** The writer claims that today the old, pure Cretan dialect  
 A. is the only authentic variety of ancient Greek.      B. is spoken more outside of Crete than inside.      C. has more idioms than other Greek dialects.
- 14a.** The survival of Cretan Hamidie is due to people's  
 A. desire to keep their Greekness.      B. need to live longer.      C. social and personal actions.
- 15a.** Other Greek dialects, such as the Pontic, are still spoken  
 A. by Greeks in Hamidie.      B. but only outside Greece.      C. in villages in northern Greece.

**ACTIVITY 4**

Read the text and answer the questions that follow (16a-20a).

# talk to the hands



Susan Gonwick is trying to introduce a very common foreign language that has never been taught in the school at all. And she's not demonstrating it in the classroom, either. Rather, it's being "taught" at football and basketball games, which bring in a much larger audience than an isolated classroom of 25 or so students. Actually, after English, Spanish and Russian, claims Susan Gonwick, the most common language used in the USA is sign language. It is a language used to communicate with the hearing-impaired, using one's hands to convey words and letters of the alphabet. The language has been used for centuries and, like Braille, was brought to America from France.

Gonwick says that sign language "was something I really wanted to

do but was never in a position to do it until five years or so ago." It was a language which was very common in the school her children attended. "My oldest and youngest girls each had deaf girls in their classrooms as fellow students," Gonwick says. "All the kids in the classes learned sign language."

Knowledge of sign language on the West Coast apparently didn't stop at the school, either. "I initially thought I would interpret for deaf children, but there were too many interpreters there. That's what brought me back here." Gonwick is now employed by Defiance County Job and Family Services, where she uses her skills. But the job was not enough to satisfy her desire to help the deaf. Today, she is a common sight at local home games, where she

signs the lyrics of the national anthem, sung before the games get underway. The hearing-impaired who attend the games no doubt appreciate Gonwick's efforts, but she says she is glad for the opportunity to keep practicing. Another benefit of signing is that it provides an opportunity for mother-daughter bonding.

Gonwick's daughter Halie has followed in her mom's footsteps in other ways. For example, she signs at the children's Masses at the Catholic church. For the future, Gonwick hopes to teach sign language classes and would like to see it offered in area schools as a foreign language. "It's the fourth-most commonly used language in the U.S.," she laments, "but they don't offer it in the high schools."

On the basis of the text about sign language, decide if the following items are True, False, or Not Stated.

STATEMENTS		A	B	C
		TRUE	FALSE	NOT STATED
16a.	Ms Gonwick believes that sign language is one of the biggest 'foreign' languages, yet it is not taught in school.			
17a.	She thinks that sign language should be an obligatory school subject.			
18a.	Gonwick learnt sign language at the community college.			
19a.	She helps the hearing impaired by interpreting for them at sports events.			
20a.	Her daughter Hallie helps her mother interpret at local home games.			

**ACTIVITY 5**

For items 21a-25a in the following text, choose the option (A-H) that best accompanies the word in bold. There are three options you do not need.

A.	varied	B.	natural	C.	isolated	D.	central
E.	dependent	F.	fringed	G.	progressive	H.	populated

The screenshot shows a web browser window with the URL [www.newscientist.com/article/mg22530062.400-data-archaeology-helps-builders-avoid-buried-treasure.html#.VO8exPmsUT0](http://www.newscientist.com/article/mg22530062.400-data-archaeology-helps-builders-avoid-buried-treasure.html#.VO8exPmsUT0). The page features the New Scientist logo and navigation menus. The main article is titled "New Zealand Fact file" and contains the following text:

Adrift in the South Pacific, some 1500km east of Australia, New Zealand is one of the most **21a** **major land masses** and was the last to be inhabited less than 1,000 years ago. At 268,000 square kilometres in area, the country is a little larger than the UK and with just over 4 million people, most parts of the country are **thinly 22a**. New Zealand is very physically varied, with hairline fiords and glacier-weighted mountains in the south; rolling green hills **23a** **with golden beaches** in the north; and abundant volcanic activity producing geysers and **24a** **hot pools**. Known by its people as "Godzone", (God's own country), it has 40 million sheep. That's ten for every inhabitant, down from twenty to one in the early 1980s. New Zealand's economy has traditionally been agriculture, and dairy products; meat and wool remain **25a** **to its continued prosperity**, with forestry and fishing also playing a part. For an instinctively conservative nation, New Zealand has often been socially progressive. There is a growing "knowledge economy" and in recent years, tourism has become the biggest sector of the economy.

On the right side of the page, there are sections for "More Latest news" and "Most read". The "More Latest news" section includes:

- Putting animals online: Does it protect or destroy? (18:46 26 February 2015)
- Google DeepMind AI outplays humans at video games (18:00 25 February 2015)
- Men have hands amputated and replaced with bionic ones (00:01 25 February 2015)
- I'll fly around the world using only solar power (20:00 24 February 2015)

The "Most read" section includes:

- Men have hands amputated and replaced with bionic ones
- First human head transplant could happen in two years
- The plan to find alien life in Europa's icy seas
- Glassed-in DNA makes the ultimate time capsule
- Ancient black hole had an inexplicable growth spurt

**ACTIVITY 6**

Read the first page of a short story, and choose the best answer (A, B, or C) for items 26a-30a.

*Katherine Mansfield*

**THE VOYAGE**

THE Picton boat was due to leave at half past eleven. It was a beautiful night, mild, starry, only when they got out of the cab and started to walk down the Old Wharf that jutted out into the harbour, a faint wind blowing off the water ruffled under Fenella's hat, and she put up her hand to keep it on. It was dark on the Old Wharf, very dark; the wool sheds, the cattle trucks, the cranes standing up so high, the little squat railway engine, all seemed carved out of solid darkness. Here and there on a rounded wood-pile, that was like the stalk of a huge black mushroom, there hung a lantern, but it seemed afraid to unfurl its timid, quivering light in all that blackness; it burned softly, as if for itself.

Fenella's father pushed on with quick, nervous strides. Beside him her grandma bustled along in her crackling black ulster; they went so fast that she had now and again to give an undignified little skip to keep up with them. As well as her luggage strapped into a neat sausage, Fenella carried clasped to her grandma's umbrella, and the handle, which was a swan's head, kept giving her shoulder a sharp little peck as if it too wanted her to hurry....Men, their caps pulled down, their collars turned up, swung by; a few women all muffled scurried along; and one tiny boy, only his little black arms and legs showing out of a white woolly shawl, was jerked along angrily between his father and mother; he looked like a baby fly that had fallen into the cream.

Then suddenly, so suddenly that Fenella and her grandma both leapt, there sounded from behind the largest wool shed, that had a trail of smoke hanging over it, *Mia-oo-oo-0-0*

'First whistle,' said her father briefly, and at that moment they came in sight of the Picton boat. Lying beside the dark wharf, all strung, all beaded with round golden lights, the Picton boat looked as if she was more ready to sail among stars than out into the cold sea. People pressed along the gangway. First went her grandma, then her father, then Fenella. There was a high step down on to the deck, and an old sailor in a jersey standing by gave her his dry, hard hand. They were there; they stepped out of the way of the hurrying people, and standing under a little iron stairway that led to the upper deck they began to say good-bye.

'There, mother, there's your luggage!' said Fenella's father, giving Grandma another strapped-up sausage.

'Thank you, Frank.'

'And you've got your cabin tickets safe?' 'Yes, dear.'

'And your other tickets?'

Grandma felt for them inside her glove and showed him the tips.

'That's right.'

He sounded stern, but Fenella, eagerly watching him, saw that he looked tired and sad. *Mia-oo-oo-O-0!* The second whistle blared just above their heads, and a voice like a cry shouted, 'Any more for the gangway?'

'You'll give my love to Father,' Fenella saw her father's lips say. And her grandma, very agitated, answered, 'Of course I will, dear. Go now. You'll be left. Go now, Frank. Go now.'

'It's all right, Mother. I've got another three minutes.' To her surprise Fenella saw her father take off his hat. He clasped Grandma in his arms and pressed her to him. 'God bless you, Mother!' she heard him say.

- 26a. What is being described here is  
 A. a farewell scene.                      B. a dramatic good bye.                      C. a romantic getaway.
- 27a. Fenella seems to be  
 A. an undeveloped character.            B. the main character.                      C. the least appealing character
- 28a. The story is being told by  
 A. a third-person narrator.                B. Fenella.                                      C. Frank, the father.
- 29a. There are some indications in the second paragraph that the grandmother is  
 A. a distinguished lady.                    B. an old hag.                                C. somewhat ill.
- 30a. The seeing-off scene being described has a touch of  
 A. reverence.                                 B. meaninglessness.                        C. sentimentality.

**ACTIVITY 7**

Read the text and choose the best definition (A-F) for each underlined word (31a-35a). There is one option you do not need.

A.	put a figure on something	B.	make something happen in a particular way
C.	continue intensely	D.	action or service helping a cause
E.	become the father of	F.	calculate with precision

**Genius and genetics**



As most of us know, there is an inheritance tax on genius. The strange coincidence of nature (what you're born with) and nurture (how you're brought up) that produces an outstanding talent can rarely be recreated. That's not to say, of course, that genius always comes from and disappears to nowhere. We do inherit our intellectual capacity and distinguished artists like Leopold Mozard and Pitro Bernini (31a) sired geniuses. But others, like JS Bach, did not.

Science has attempted to (32a) to quantify the phenomenon. In the Western world, an

individual's IQ has been consistently estimated to be 75% (33a) determined by his or her genes. Yet such measurements only tell us that identical twins are likely to be similarly clever. It does not explain how a mother's and father's genes combine to create intelligence.

Meanwhile, investigations into the (34a) contribution of 'nurture' suggest that for almost all the great geniuses, extraordinary powers of dedication went alongside extraordinary ability. The debate (35a) rages on, but it seems if you aspire to genius, it is best not to be distracted by the quarrel.

**ACTIVITY 8**

8.1 Read PART ONE of the text and choose the best answer (A, B, or C) for items 36a-38a.

36a. This text

- A. is an academic event report.      B. promotes media and pop culture.      C. is a guide to making science entertaining.

37a. The text points out that entertainment media

- A. have been researched for a great many years.      B. make viewers think that science is hard.      C. have an impact on how people think about science.

38a. The aim of bringing together scholars from various disciplines was

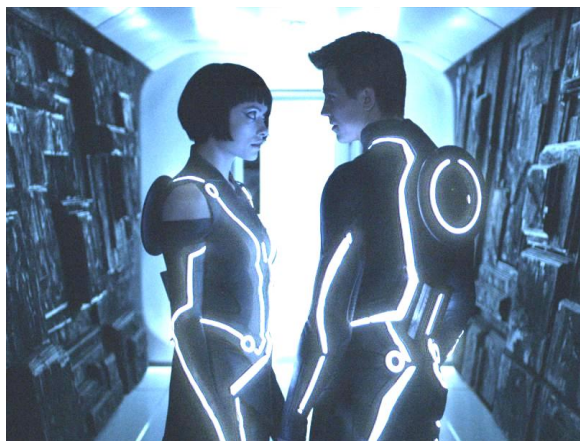
- A. to put into perspective the different cultural traditions.      B. to bring to light various angles on the same issue.      C. to witness the popularisation of science in various cultures.

**PART ONE****FROM ELITE MEDIA TO MASS & ENTERTAINMENT CULTURE**

*Joachim Allgaier & Hauke Riesch*

Research on science communication and public engagement with science so far has strongly focused on science content in journalistic news media and only a few studies have seriously examined other products of media and popular culture. However, many scholars stress that entertainment media also influence public perceptions of science, research and technology, such as genetic risks and beliefs and prejudices about biotechnology, and should therefore be studied accordingly.

Science education and science journalism will, of course, still be important sources of information for many people. However, the historian A. Bowdoin Van Riper (2003) asserts: "Popular culture probably does more than formal science education to shape most people's understanding of science and scientists. It is more pervasive, more eye-catching, and more memorable." Recent research has confirmed this view. For instance, a study by Tan et al. (2015) found that popular culture and media strongly influence and shape how young children view scientists.



To address the issue how popular culture, science and research interact, our conference sought to bring together scholars, scientists and researchers, artists, and media professionals. The aim was to collect various international perspectives on this so far relatively under-researched topical complex concerning the interactions between science, research and popular culture. The conference in Klagenfurt featured around thirty presentations and contributions by speakers from thirteen different countries and therefore also perspectives on science and popular culture from various cultural traditions (including Taiwan, Philippines, Brazil, USA, Europe).

The speakers followed different approaches and addressed various formats, genres and issues of popular culture, science and research.

For instance, we heard about how science and research are presented and represented in a variety of different formats: in fictional movies, TV series, and documentaries, in comic books and cartoons, in music and music videos, on social media sites, in artistic and theatrical performances, science slams, popular satire, Brazilian carnival, and in science as a leisure activity and adventure on holidays. We heard how popularisation of physics and Mathematics become part of popular culture, and the role arts and the visual play in popularisation of science and research, as well as the presentation of science both in science fiction and other popular film and literary genres.



**8.2 Read PART TWO of the text and choose the best answer (A, B, or C) for items 39a-42a.**

- 39a.** One of the issues discussed at the event is related to how humour is used
- A.** in scientific experiments and research.      **B.** to represent science research.      **C.** to popularise science and research.
- 40a.** Another issue that scholars at this event presented was
- A.** how culture & media studies affect science research too.      **B.** whether popular culture has negative effects on science.      **C.** if audiences react positively to scientific research.
- 41a.** Bernhard Seidel, an ecology scientist, spoke about how his scientific research is linked to
- A.** his singing career.      **B.** his ecological philosophy.      **C.** his political activism.
- 42a.** It was interesting to hear about the 'Expedition Mundus', created
- A.** by a conference delegate from Manila.      **B.** to help youngsters develop scientific thinking skills.      **C.** through simulating an expedition to an alien planet.

**PART TWO**

Among other issues and topics, the speakers examined the role humour and aesthetics play in the popular representation of science and research and how they are being used for public science communication. Questions that the contributors asked with their research included how specific disciplines of science and research were depicted in various formats of popular culture and how various audiences perceive science and research in various popular cultural formats. Another interesting question also concerned the reach of various popular depictions and representations of science and research, from comparatively small local audiences in theatre performances and science slams to global mass audiences in blockbuster Hollywood movies. Various speakers also pondered on the role that science and technology studies perspectives have on popular culture, as well as those of cultural studies, media studies, literary theory and arts perspectives among others on science and research.

It was also of interest how scientists and researchers themselves relate to issues, themes, topics and channels of popular culture. An interesting perspective was added here by the ecologist Bernhard Seidel, who is an expert on the ecology and migration patterns of mosquitos and other animals and insects, and winner of various arts awards. In his presentation, Seidel outlined how he became increasingly concerned about ecological problems caused by hydropower, based on his research findings, and consequently how he turned from being a neutral scientist to becoming a science and eco activist.

Seidel's strategy to reach out to the public, media and policy makers was to make use of popular culture, particularly popular music. As a musician, he wrote and performed various songs about ecological problems and also recorded various Audio-CDs in order to make his voice heard. As a special treat, Seidel performed several of his songs live at the conference venue after giving an evening lecture on his research. The scientist-singer-songwriter assumes that it is much easier to gain the interest of a significant audience with an emotional and catchy song, than with sober research results alone.

Another route was taken by cartoon artist Darry Cunningham, who used a biographical approach in his keynote talk to speak about how he ended up drawing cartoons about psychiatry and mental illnesses. In an informal session and atmosphere, Global Young Academy member and conference delegate Thomas Edison Dela Cruz, from Manila, played the inquiry-based science education game 'Expedition Mundus' with the conference participants. The open source game 'Expedition Mundus' was created by the Dutch Young Academy as an entertaining and playful tool to capture the interest of young people for scientific thinking and research by simulating an expedition to an alien planet. Apart from getting to know each other, this event also was an interesting practical example on how playful entertainment can foster scientific thinking and understanding.

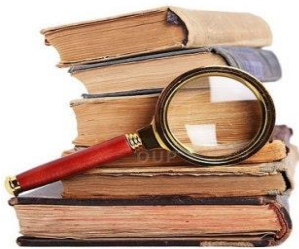
**8.3 What do the words in italics mean? Choose the best answer (A, B, or C) for items 43a-45a.**

- 43a. Depictions of science and research in theatre performance *slams* and *blockbuster* movies...
  - A. flops / knockouts
  - B. bangs / smash hits
  - C. fiascos / dubious
- 44a. How Seidel *turned* from being a neutral scientist to becoming a science and eco activist.
  - A. was driven
  - B. was twisted
  - C. was jaunted
- 45a. The *open source* game 'Expedition Mundus' was created by...
  - A. a simple electronic game with no rules
  - B. a free internet game based on electromagnets
  - C. an electronic game based on a code available for use

**ACTIVITY 9**

Read extracts 46a-50a and match each underlined word or phrase with a synonymous one (options A-F). There is one option you do not need.

A.	in jeopardy	B.	plunge	C.	profit
D.	gambling	E.	promotion	F.	wickedness



- 46a. Investing in individual companies on the stock market can often seem like a roll of the dice. Share prices of even the largest publicly traded company can soar 25% over two years only to lose all those gains in a couple of months due to a single bad quarterly report. Those who seek long-term financial gains are usually recommended mutual funds or other lower-risk assets.
- 47a. Embrace your dark side! While Doodle God was creating the universe, Doodle Devil was also having some fun. The same addictive, puzzle game play that made Doodle God a hit is back but with an evil twist. Discover the seven deadly sins and watch as the world crumbles at your fingertips... Combine fire, earth, water & air to create demons, beasts, & zombies...
- 48a. The large Russian machinery manufacturer, which saw demand for its mobile cranes collapse as economic crisis gripped the country in late 2014, is still battling hard to avoid bankruptcy. They witnessed production nose-dive from 2,070 cranes in 2013 to a mere 70 in 2015.
- 49a. CUPERTINO, Calif. – Shrugging off a gruelling week that left his voice weary and body slightly slumped, Tim Cook glowed when an investor broached the topic of Apple's showdown with the FBI during its shareholders meeting here earlier this month. Bolting straight and adding timbre to his soft Southern accent, Apple's (AAPL) CEO explained why so much is at stake when fighting the FBI's request to unlock an iPhone used by one of the San Bernardino killers.
- 50a. The decision of how much to spend on developing new technology can be a difficult one for companies. Such a decision entails spending money in the immediate future to fund potential revenue streams down the road. IBM spent \$5.7 billion on (R&D) in fiscal 2013. The following year, IBM's R&D spending declined to \$5.4 billion, or about 6% of total revenue on R&D. Given that American corporations –particularly tech companies– appear to be in a relatively strong financial position, this decline in awarded patents may be surprising.

**PART B - SHORT ANSWERS**

**ACTIVITY 1**

Fill in the missing words (1b-5b) in the text below. The first letter of each word is provided and the dashes correspond to the missing letters.

**ANAXIMANDROS INVENTS THE GNOMON AND THE MAP**



Two very important events date to 550 BC and relate to Anaximandros of Miletos, philosopher and scientist, student of Thales whose work he continued. Anaximandros (1b) **i** \_\_\_\_\_ and constructed the first map in worldwide history, while the invention of the gnomon is also (2b) **a** \_\_\_\_\_ to him. The gnomon is an instrument which was later proven to be incredibly important. It led to the sundials, an instrument, also named 'skiotheres' (shadow hunter), with which one could (3b) **c** \_\_\_\_\_ the duration of the day, the hours and the exact time during the day. From this point of view, the gnomon proved to be a most valuable instrument for ascertaining time. Sundials, a category of instruments which evolved to become astronomical instruments, were based on the gnomon, while the portable sundials are the (4b) **a** \_\_\_\_\_ of the present day watches.

With his philosophical view of the world, and the conception of the world's form imprinted upon a map (a matrix, as they called it), Anaximandros set the (5b) **f** \_\_\_\_\_ of cartography on a wider context. Even though the roots of those achievements are to be found in earlier civilizations, such as the Babylonians, Anaximandros is the first who put the 'boundaries' of the world and put its impression on materials such as stone and wood. That map was certainly not correct, but it was the founding stone to sciences like geography, cartography and astronomy.

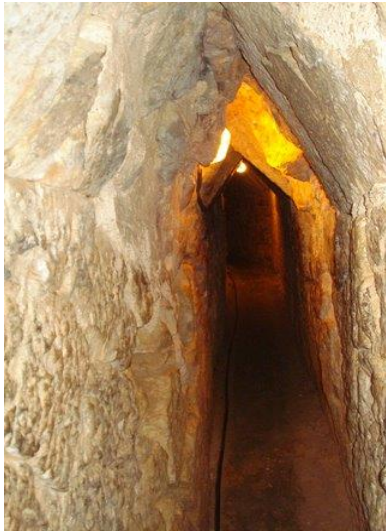
**ACTIVITY 2**

Solve the puzzle. Put the jumbled words in Column B in the correct order to complete items 6b-10b in Column A.

COLUMN A		COLUMN B
6b.	<b>Amnesty International</b> Open your newspaper any day of the week, and you will find a report from somewhere _____, tortured or executed because his or her beliefs are unacceptable to his or her government.	someone - being - of - the world - imprisoned - in
7b.	<b>Extract from a <i>Daily Mirror</i> article</b> Britain's foreign debts in the mid 70s were more than 15.800 million dollars, which had to be repaid _____ originally. At exchange rates ruling at the time, the debt totaled 9.231 million pounds.	borrowed - currency - was - whatever - in - it
8b.	<b>Extract from <i>Scientific American</i></b> Deaths and injuries from motor vehicle accidents are reaching epidemic proportions around the world, according to the World Health Organization. Traffic accidents amount to a 'social scourge', and all too often the victims are young educated men _____ enabled them to buy a motorcycle or an automobile.	has - power - earning - whose - increased
9b.	<b>Riddle: What's the explanation?</b> It was 2:00 in the morning when I saw the car parked just off the motorway. A man was prowling suspiciously round the car, looking on the ground. Suddenly, the man picked up a large stone and began _____.	in - batter - door - to - glass - the - driving - the
10b.	<b>Extract from an article in <i>The Times</i></b> Abnormally aggressive or submissive behavior in a child is often a cry for help and should be _____ rather than with criticism and punishment, Dr James Hemming says.	and - support - treated - understanding - with

**ACTIVITY 3**

Fill in the missing words (11b-15b) in the text below. The first letter is provided.

**CONSTRUCTION OF THE FAMOUS TUNNEL OF EUPALINOS IN SAMOS**

One of the greatest engineering achievements of ancient times is a water tunnel, **(11b) c \_\_\_\_\_** in 520 BC by Eupalinos, an engineer from Megara, with the intend of providing Samos with water. This extraordinary tunnel is 1,036 meters long, **(12b) e \_\_\_\_\_** through a mountain. It was dug through solid limestone by two separate teams advancing in a straight line from both ends, using only picks, hammers, and chisels. This was a prodigious feat of manual labor. The intellectual feat of determining the direction of tunneling was **(13b) e \_\_\_\_\_** impressive. How did they do this? No one knows for sure, because no written records exist. When the tunnel was dug, the Greeks had no magnetic compass, no surveying instruments, no topographic maps, nor even much written mathematics at their **(14b) d \_\_\_\_\_**. Euclid's Elements, the first major compendium of ancient mathematics, was written some 200 years later.

There are, however, some convincing explanations, the oldest of which is based on a theoretical method devised by Hero of Alexandria five centuries after the tunnel was completed. It calls for a series of right-angled traverses around the mountain beginning at one entrance of the proposed tunnel and ending at the other, maintaining a constant elevation. By **(15b) m \_\_\_\_\_** the net distance traveled in each of two perpendicular directions, the lengths of two legs of a right triangle are determined, and the hypotenuse of the triangle is the proposed line of the tunnel. By laying out smaller similar right triangles at each entrance, markers can be used by each crew to determine the direction for tunneling.

**ACTIVITY 4**

Fill in each of the gaps 16b-20b with a word which completes an idiomatic expression, so that the statements below make sense.

<b>16b.</b>	Which leads us to the question of which language is the most useful to learn. Leo might be barking up the wrong _____ with French. Spanish is now the fastest growing tongue on earth and is set to overtake English. It is the official language of 20 countries and 11% of Americans now speak it as their first language. [THE GUARDIAN, 5/12/2001]
<b>17b</b>	Pampered children are often less able to cope with stress because their parents have created an atmosphere where their whims are indulged, when they have always assumed that they are entitled, and that life should be a bed of _____. [THE OBSERVER, 5/8/2011]
<b>18b</b>	More than a million people are registered disabled with back pain but I'm afraid many are lying. They get away with it because it is so easy to pull the wool over the _____ of the medical profession. [THE SUNDAY TIMES, 2/3/2003]
<b>19b.</b>	The next thing you noticed during the performance on Friday, soon into the first movement of the Haydn, was a sense of faltering, when things came out of alignment. It felt as if the musicians got off on the wrong _____, and there were similar moments throughout. [NEW YORK TIMES, 14/12/2004]
<b>20b.</b>	Comedian Gervais wrote, directed and starred in the cinema commercial, in which he plays a factory worker who claims he would have no problem employing a disabled person. But, in a typically cringeworthy way, the character shows his true _____ by listing a series of ridiculous reasons why candidates with disabilities would not fit into the workplace... [THE GUARDIAN, 27/11/2012]

**ΣΑΣ ΥΠΕΝΘΥΜΙΖΟΥΜΕ ΟΤΙ ΠΡΕΠΕΙ ΝΑ ΜΕΤΑΦΕΡΕΤΕ ΟΛΕΣ ΤΙΣ ΑΠΑΝΤΗΣΕΙΣ ΣΤΟ ΕΝΤΥΠΟ 1**

**ΤΕΛΟΣ ΜΗΝΥΜΑΤΟΣ**