IELTS

雅思阅读真题及预测

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简　　介

管永川

无忧雅思网 www.51ielts.com 创始人，著名英语测试和教学专家，计算机及语言测试学硕士，澳洲 IDP 教育机构（雅思三大考试主办方之一）中国地区指定合作方，亚太地区雅思资讯网站排名连续 10 年第一。曾在美国、加拿大地区从事雅思、托福、SAT 等留学考试的中外交流合作，长期和雅思、托福领域顶级学校及著名教师进行合作交流、图书出版、机经编辑、预测解析等工作。到目前为止合作方包括英国使馆文化教育处、IDP、剑桥大学出版社、环球雅思学校、新航道、新东方、北外雅思等雅思官方机构和培训机构、为数百万雅思考生排忧解难，指引雅思考试的最新方向。 自 2003 年开始，每年连续推出《无忧雅思机经》《无忧托福机经》各种版本，销量及下载量累计超过 500 万册次以上。

曹书畅

毕业于北京外国语大学，随后赴澳洲取得 MBA 硕士学位，期间一并攻读教育语言学的经典著作和辅修测试学，不断探索语言学源流，深入钻研各种出国留学考试，参与雅思、托福等出国留学考试的内部测试测评。回国后在众家国内顶级学校任教，从事雅思、托福、SAT 等考试的研发和教学工作。从事教育工作长达十年之久，2011 年创造雅思阅读、听力 11 种考点串联，开拓阅读领域教学新篇章。2012 年任职北京外国语大学雅思学院，开办 8 小时雅思全日制 A+A 保分课程，学员保分成功率达到 98%，缔造业绩又一个奇迹。2013 年联合业界顶级雅思研发团队（无忧雅思网）一同推出《每周雅思预报》和《雅思机经超详细》系列资料，受到业界顶级名师的联合推荐，在广大烤鸭们中产生轰动效应。

Content 科学

雅思阅读高分策略

雅思阅读考试中取得高分并不难。

首先，要深入透彻的理解雅思阅读考试的表面形式与实质特点。

然后，有针对性地培养雅思阅读能力和解题技巧，做到阅读实力的提升和十大题型解题技巧的完美结合。

下文分述之。

一、表面形式

● 3 个部分

A 类阅读：三个部分分别为三篇长文章，每篇长度在 900 – 1000 个单词左右，学术类科普读物。

G 类阅读：第一部分通常有两篇较短的文章，阅读的是提供某种产品或服务的基本信息的广告类文章；第二部分稍复杂，阅读短信息，内容多为有关学习课程、学校介绍的信息；第三部分最难，阅读一篇篇幅较长的学术类文章。

● 40 道题

A 类和 G 类阅读考试均为 40 道题。答案要求用铅笔填在答题卡上。

● 60 分钟

A 类和 G 类阅读考试时间均为 60 分钟，紧接在雅思听力考试之后。阅读考试无额外的时间誊写答案。所以考试时答案应直接写在答题卡上。

● 10 种题型

雅思考试官方按题型形式分为 10 种题型，但针对中国考生的学习习惯特点，培训机构一般在雅思教学培训中按解题思路的不同分为下面 10 种题型分别进行讲解。

● **9 分**

雅思阅读评分标准 (A 类和 G 类)

学术类阅读		移民类阅读	
正确题数	分数	正确题数	分数
10—12	4	15—17	4
13—15	4. 5	18—19	4. 5
16—19	5	20—22	5
20—22	5. 5	23—24	5. 5
23—25	6	25—27	6
26—27	6. 5	28—29	6. 5
28—30	7	30—32	7
31—32	7. 5	33—34	7. 5
33—35	8	35—37	8
36—38	8. 5	38—39	8. 5
39—40	9	40	9

二、实质特点

● **考试目的**

A 类：Study，考查考生通过学术话题文章的阅读掌握所需信息，理解并获取知识的能力。

G 类：Survival，考查考生在英语国家中生活所必备的阅读能力。

● **文章题材**

A 类文章内容主要由选自世界各大重要媒体（相关网站如：www.nature.com; www.nationalgeographic.com; www.economist.com ）的文章改写而成。内容涉及经济、教育、科技、医学、环境、能源、地质、海洋、动植物等方面问题。

G 类文章内容与日常生活息息相关。文章来自于布告、广告、官方文件、小册子、报纸、说明书、时间表、杂志，以及学校的各种规章制度等。

文章体裁

A 类：说明文和议论文，三篇文章中必然有一篇包含详细的议论。

G 类：说明文。

● 考试特点

雅思阅读部分由剑桥大学考试委员会和澳大利亚考试中心负责试题的编写，所以阅读试题以前多以英国和澳大利亚的生活背景为主，但现在的选材以更趋于国际化。

考试文章以大众题材为主，不涉及专业性很强的文章，以免给某些专业的考生造成优势或劣势。除选材多样化以外，尽量设计多层次、多范畴信息题型，从不同角度考查考生理解把握文章的能力。

雅思阅读考试没有专门设计语法和词汇的专项题型，这是有别于其他外语考试形式的一个重要特征。相反，在一些较难的文章之后还附带有一些提示的生词表或注解（Glossary），以帮助考生理解某些关键词语和定义，从而更好点理解全文。这是因为雅思阅读考试既不是考查考生是否能理解每一个单词、每一句话的确切含义，也不是考查在某一学科的专业能力，而旨在评估考生的综合英语阅读能力。

● 重点考查技能

雅思 A 类阅读最大特点是阅读量大。三篇文章，最常见的文章长度为 900 个单词左右一篇，大部分考生在学习雅思之前很少接触此类长文章。因此，如何在 10 分钟内快速的浏览完一篇文章，把握文章结构大意，留出更多的时间做题是提高雅思阅读成绩的关键。雅思阅读还强调考生 reading with purpose 的能力，在大量的信息中找到自己想要的信息。这对考生今后对付国外大学教授布置的如山的课后阅读材料是大有裨益的。而且，我们“有幸”生活在信息时代，每个人都不缺乏信息，相反都是 information overloaded。那么雅思阅读其实培养了我们一种基本的生存能力：如何在信息的海洋中找到自己想要的部分，而不是被信息所包围，最终遭遇灭顶之灾。

所以，A 类阅读考试的考核重点是：阅读文章时能正确理解文章，把握文章主旨和结构；做题时能回原文迅速找到考点具体信息，理解文中的主要事实和某些特定的细节，根据上下文猜出某些词句大意，弄清句子间的逻辑关系，能进行

一定的判断推理。

雅思 G 类考到的题目涉及考生在英语国家必备的生存技能，即是否具备获取、理解并处理基本信息的能力。就考核技能而言，雅思 G 类阅读主要涉及抓主旨、定位细节和比较信息，较少考核推理、判断与得出结论等学术技能。

三、雅思阅读实力提升

雅思阅读实力提升阅读实力的提升绝非一朝一夕之功。单词量和对英语语法的熟练程度是各类英语阅读考试高分的基石。雅思亦是如此。通常来说，达到大学英语六级水平的考生，其单词量（5500 左右）和语法程度达到雅思阅读的基本要求，再通过对雅思阅读特点和方法的掌握，可望在短期内达到 6 分以上的水平。

● 单词

根据自己的英语基础制定出每天能够坚持的、切实可行的背单词计划。结合阅读文章记忆单词是颇为有效的方法。如脱离语言环境，孤立地背词汇，就很容易把单词的意义和正确用法遗忘或混淆。而且枯燥的单词书、字母表很容易让人疲倦和产生挫败感。在精读雅思文章的同时背单词，除了单词的收获，还能深入理解文章中的各类人文常识、趣味科普知识，从而产生每天坚持阅读、坚持背单词的兴趣和动力。另外，有效背记单词的另一个重要原则是：一定要反复多遍。背过的单词一定要定期的重复复习。

● 语法

雅思的语法掌握侧重对句子的理解，应学会从句子的主干成分主谓结构入手，对并列句、比较句、指代句、复合句和双重否定句有充分的把握，注意人称、语态在句子中的变化，并结合句子上下文，正确地掌握其要表达的意思。要逐渐培养将一个长句子读成一个相对短的句子，即长句短读的能力。读完一个长句后自己能总结归纳，提炼其陈述的要点。

● 加大阅读广度

以往在和雅思阅读 8 分以上的高分学员的交流中发现：学员们的单词量大小可能有所差异，但共同点却很明显：英语的累积阅读量大。有的是考前通读过多

种雅思阅读材料；有的是过去读过 TOEFL、GRE 和 GMAT 的各类文章，有的是因为工作的需要每天上网快速阅读英文参考文献……所以，积累和扩大自己的英语阅读量是迈向高分的必由之路。G 类考试的阅读中前两部分通常是实用性强的功能性短文，如菜单、产品说明、通知、住宿安排和广告等，非常贴近西方的实际生活，但对国内绝大多数考生而言很陌生。建议争取每天阅读一定量的原版英文报刊、书籍，如 Time、Reader's Digest 等，尤其注意其中的各类广告。而 A 类阅读则注意多阅读篇幅较长的科普文章或学术性议论文，建议每天坚持半小时以上浏览 www.nature.com、www.nationalgeographic.com、www.economist.com 、www.newscientist.com 等网站。它们的文风、常用词汇和句子结构都和雅思 A 类阅读相似。

● 提高阅读速度

雅思考试的阅读部分，无论是 A 类还是 G 类都是同时测试考生的阅读速度和理解的精确度。而如何快速的阅读完长文章，留出充足的时间回答各类题型，是考生必然面临的一个难题。要想提高阅读速度首先要改掉影响阅读速度的不良习惯。针对大多数考生的通病，提出下面四点注意事项：

1. 扩大眼睛扫描的宽度。要达到雅思阅读的速度，请注意训练自己一眼看过，至少阅读到 3 – 5 个单词

2. 阅读过程中只使用眼睛和大脑两大器官。不要用手指和笔引导阅读，不要小声读出来（使用了嘴和耳朵），不要在心中默读（能默读说明你一眼只看到一个单词）。

3. 遇到生词不用紧张，学会通过上下文猜测大意。

4. 有重点的阅读，把握文章结构和大意。

● 培养重要考核能力

有了以上基础，还要有针对性的训练和提高雅思阅读所要求的各种阅读能力。按照各种阅读能力对获得雅思高分的重要性排序，它们依次为：

把握长文章结构（Understanding framework of a passage）快速浏览长文章（Skimming）扫描特定信息（Scanning）理解复杂句子结构（Understanding complex structures）通过上下文猜测词义（Understanding meaning from context）形成概念（Forming a mental image）

雅思阅读真题词汇同意替换整理版

序号	题目单词	原文替换单词	衍生同意单词
1	scientist	expert	physicist, specialist, biologist, zoologist, chemist, researcher, professor, master, skeptics, advocate
2	revision	change, rather than, instead of, shift	correct, transformation, contrast, adjustment, turn, but, however, nevertheless, contrary
3	policy	way, philosophy organisation	rule, law, principle, guideline, decision government, department
4	explanation	explain	claim, conclusion, tell, instruct, demonstrate, declare, argue, believe, maintain, insist, emphasize, say, “”
5	reduce	decrease, drop, fall, slow	minus, decline, descend, down, cut, small, ressession, shrink, leak, downward, small
6	use	consume	apply, employ, utilize, adopt, make use of
7	irrigation	agriculture	food supply, water, canal, lake, ocean, sea, river, field, farmland, farmer, meadow
8	disuse	No	without, not, lack, impossible, improper, inappropriate, unnecessary, abandon, desert, give up, refuse, resist
9	environmental	eco-system	environment, surrounding, atmosphere, circumstance, situation, condition
10	effect	consequence	influence, impact, reflect, result, affect, conclusion, end, hence, thus, therefore, accordingly, outcome, finally, last, fruit, yield
11	financial	Finance	cost, economy, economic, bill, fee, fare, freight, money, consumption, expenditure, spend, tax, tariff, expense, duty, custom, currency, fund, invest, donation, scholarship, penny, pound, dollar, rent, deposit, value, worth。。。。$
12	technology	technology	science, skill, machine, equipment, facility, infrastructure, tool, vehicle, technician, engineer

13	relevance	Relate	connect, link, contact, associate, relationship, intimate, get touch with
14	health	Disease	fitness, well-being, well, illness, cancer, cold, sanitation
15	concern	Worry	care, matter
16	increase	superior, extend	rise, up, ascend, more, accelerate, speed up, accumulate, peak, summit, grow, climb, upward, raise, high, soar, leap
17	surprising	unexpected, predict	unbelievable, incredible, terrific, amazing, forecast, anticipate, think, plan
18	need	Demand	call for, require, request, want, desire, eager, willing…
19	standard	Criteria	example, model, size, weight, specification, line, regulation, limit, restrict, criterion…
20	research	Study	investigation, researcher
21	dental	tooth, teeth	dentist
22	development	develop, advancement	promotion, improvement, high, progress, boost
23	population movement	migration	immigrant, shift, change
24	method	technique	approach, measure, way, technology, technical, strategy, skill, tool
25	early	prehistoric	long long ago, before, previous, former, 过去式, 1890s, 1980s, ancestor, precede, date back, precursor, primitive, original, aboriginal, archaeology
26	further	Next	then, advance, additional…
27	question	?	problem, issue, doubt, difficulty, suspicious, suspect
28	cause	Reason	lead to, result in/from, attribute, abscirbe, due to, owing to, because, contribute, why, thanks to, hence, thus, therefore, accordingly, consequence
29	relationship	Relate	relavant, relative, friendship, fellowship

30	different	but, however	unlike, conversely, yet, nevertheless, nonetheless
31	between	Two	2, as well as, and, on the one hand…on the other hand, either…or…, both…and…, the former…the latter, couple with
32	measure	calibrate	test, scale, calculate, figure out
33	domestic water	drinking water	shower, WC, toilet, wash, irrigate
34	purify	clean, removal	clear, tidy, anti-bacteria, sanitation, remove, get rid of
35	farming industry	Farm	agriculture, peasant, farmer, farmland, field, pest, animal, herd, cultivate, plant
36	stage	first, second, third, then	finally, next, level, rank, grade, class…
37	term	be referred to as	definition, technical word, vocabulary, be defined as, be known as, be called, be termed as, expression
38	hidden	not appear	disappear, invisible, vanish, hide, underlie, escape, secret, buried, concealed, obscure, cover
39	chemical	pesticide，fertilizer	dirty, science, pollution, chemistry, DDT, poison
40	city	urban	downtown, metropolitan
41	positive	phenomenal	encouraging, promote, energetic, excellent, extraordinary, attractive, great, gorgeous, prominent, supportive, favorable
42	military	battle, battlefield	soldier, navy, army, air force, force, war, arm, gun, marine,
43	electronically	computer	electricity, current, battery, laptop, mobile phone, television, telephone, e-mail, internet
44	difficulty	barrier	not deal with, not handle, not tackle, shortcoming, disadvantage, mistake, drawback, ban, problem
45	first	coin	start, primary, elementary, primitive, original, initial, begin, find, discover, create, invention, build, construct, compose

46	product	produce	vegetable, fruit, thing, article, item, object, physical, ware, goods…
47	abroad		oversea, foreign
48	local		native, our, domestic, own, themselves, civil
49	deliver	send	transport, traffic, sea, freight, airmail, EMS, post, import, export, convey
50	biological	gene, instinct	creature, biology, biologist, animal, tiger, snake, evolution
51	explanation	tell	explain, say, argue, claim, state, believe, maintain, insist, persist, doubt
52	experiment	lab	laboratory, subject, microscope, researcher
53	pupil	pupil	primary school, elementary school, education
54	identity	actor	identify, identification, student, son
55	statistical	数字	data, number, figure, census, demography, numeration
56	expect	predict, want	guess, think, estimate, anticipate, forecast, foresee
57	aim	goal	target, purpose
58	again	前缀 re-	back, second
59	common	general	public, people, person, society, social, share
60	topic	subject	theme, thesis, issue
61	conversation	talk	dialogue, speech, lecture, seminar
62	identify	identity	understand, know, acquaintance, recognize, realize, consider, opinion
63	improvement	advancement	great, promotion, propel, progress, positive, excellent, advantageous, remarkable, prominent, boost
64	official	government	officer, public servant, nation, country, worker, authority
65	location	boulevard	situation, place, sit, locate, situate, position, address, lane, road, street, avenue
66	actor	superstar	actress, player, personate, impersonate

67	pessimistic	worse	bad, negative, failure, fail, hopeless, harmful, inferior, tough
68	instantly	rapid	quickly, fast, speedy, immediately, promptly
69	well known	famous, notoriety	celebrated, noted, renowned, famed, illustrious
70	view	outlook	opinion, perspective, viewpoint, stand, sentiment, thought
71	bring	confer	supply, present, offer, give, apply
72	exchange	together	change, transform, communicate, associate, colleague, cooperation, collaborate
73	expertise	scientist	expert, master, researcher, engineer, physicist
74	different sports	a number of sports swimming, squash, golfer	a variety of sports, basketball, valleyball, football
75	visual imaging	camera, photo	see, view, picture, image, photograph, drawing, diagram
76	narrow	focus	specify, concentrate, shrink, decline, decrease
77	reproduce	copy, replicate	produce again, duplicate
78	optimum	best	greatest, first, leading
79	achievement	score	performance, accomplishment, skill, ability
80	event	championship	match, game, competition, olympic game, contest, sport activity, action
81	detailed	explicit	specific, elaborate, minute
82	potential	be liable to	may be, be able to, likely, possible, probable, be inclined to
83	difference	distinguish	distinction, different, differ, differentiate, unlike, contrast, contrary, adverse, discrimination, odds
84	the same as	like	equivalent, equal, parallel, similar, as, coincide…with, coincidence, resemble
85	entirely	totally	completely, utterly, undoubtedly, absolutely, whole

86	field	domain	kingdom, province, realm, scopes, sign, terrain
87	quickly	fast	swift, speedy, prompt, immediate, sudden
88	unpredictable	fluctuate	rebound, uncertain
89	big	massive	adequate, abundant, substantial, large quantity of, a great deal of, plenty of, accumulative, many, much, excessive
90	delieve	send	transmit, pass, hand over, submit, give
91	restrict	slow down	limit, confine, constrain, curb, minimal, few, smaller
92	pressing	urgent	clamant, emergent, exigent, hurry-up, imperative
93	such as	like	for example, for instance, as an illustration of, to illustrate, case
94	elderly people	old people	senior citizen, old folks, the elderly
95	sophisticated	developed	advanced, complicated, complex, intricate, perplexing, tangle some
96	fair	equal, equitable	disinterested, evenhanded, impartial, square, equality
97	target	goal	aim, cause, end, object, objective
98	vehicle	car, truck	automobile, motor vehicles, transportation means, bus, minibus, carriage, truck, van, traffic
99	unwanted material	waste	rubbish, trash, garbage, junk, litter, muck, sweeping
100	lifestyle	way	mode, method, manner, fashion

Communication in science

A Science plays an increasingly significant role in people's lives, making the faithful communication of scientific developments more important than ever. Yet such communication is fraught with challenges that can easily distort discussions, leading to unnecessary confusion and misunderstandings.

B Some problems stem from the esoteric nature of current research and the associated difficulty of finding sufficiently faithful terminology (术语). Abstraction and complexity are not signs that a given scientific direction is wrong, as some commentators have suggested, but are instead a tribute to the success of human ingenuity in meeting the increasingly complex challenges that nature presents. They can, however, make communication more difficult. But many of the biggest challenges for science reporting arise because in areas of evolving research, scientists themselves often only partly understand the full implications of any particular advance or development. Since that dynamic (动态的) applies to most of the scientific developments that directly affect people's lives global warming, cancer research, diet studies—learning how to overcome it is critical to spurring (刺激，鼓励) a more informed scientific debate among the broader public.

C Ambiguous word choices are the source of some misunderstandings. Scientists often employ colloquial terminology, which they then assign a specific meaning that is impossible to fathom (彻底理解)without proper training. The term "relativity," for example, is intrinsically misleading. Many interpret the theory to mean that everything is relative and there are no absolutes. Yet although the measurements any observer makes depend on his coordinates and reference frame, the physical phenomena he measures have an invariant description that transcends that observer's particular coordinates. Einstein's theory of relativity is really about finding an invariant description of physical phenomena. True, Einstein agreed with the idea that his theory would have been better named "Invarianten theorie."(【德】，不变理论) But the term "relativity" was already entrenched at the time for him to change.

D "The uncertainty principle" is another frequently abused term. It is sometimes interpreted as a limitation on observers and their ability to make measurements.

E But it is not about intrinsic limitations on any one particular measurement; it is about the inability to precisely measure particular pairs of quantities simultaneously? The first interpretation is perhaps more engaging from a philosophical or political perspective. It's just not what the science is about.

F Even the word "theory" can be a problem. Unlike most people, who use the word to describe a passing conjecture that they often regard as suspect, physicists have very specific ideas in mind when they talk about theories. For physicists, theories entail a definite physical framework embodied in a set of fundamental assumptions about the world that lead to a specific set of equations and predictions—ones that are borne out by successful predictions. Theories aren't necessarily shown to be correct or complete immediately. Even Einstein took the better part of a decade to develop the correct version of his theory of general relativity. But eventually both the ideas and the measurements settle down and theories are either proven correct, abandoned or absorbed into other, more encompassing theories.

G "Global warming" is another example of problematic terminology. Climatologists (气象学家) predict more drastic fluctuations in temperature and rainfall—not necessarily that every place will be warmer. The name sometimes subverts the debate, since it lets people argue that their winter was worse, so how could there be global wanning? Clearly "global climate change" would have been a better name. But not all problems stem solely from poor word choices. Some stem from the intrinsically complex nature of much of modern science. Science sometimes transcends this limitation: remarkably, chemists were able to detail the precise chemical processes involved in the destruction of the ozone layer, making the evidence that chlorofluorocarbon gases (Freon, for example) were destroying the ozone layer indisputable.

H A better understanding of the mathematical significance of results and less insistence on a simple story would help to clarify (澄清) many scientific discussions. For several months, Harvard was tortured months, Harvard was tortured

by empty debates over the relative intrinsic scientific abilities of men and women. One of the more amusing aspects of the discussion was that those who believed in the differences and those who didn't used the same evidence about gender-specific special ability. How could that be? The answer is that the data shows no substantial effects. Social factors might account for these tiny differences, which in any case have an unclear connection to scientific ability. Not much of a headline when phrased that way, is it? Each type of science has its own source of complexity and potential for miscommunication. Yet there are steps we can take to improve public understanding in all cases. The first would be to inculcate greater understanding and acceptance of indirect scientific evidence. The information from an unmanned space mission is no less legitimate than the information from one in which people are on board.

I This doesn't mean never questioning an interpretation, but it also doesn't mean equating indirect evidence with blind belief, as people sometimes suggest. Second, we might need different standards for evaluating science with urgent policy implications than research with purely theoretical value. When scientists say they are not certain about their predictions, it doesn't necessarily mean they've found nothing substantial. It would be better if scientists were more open about the mathematical significance of their results and if the public didn't treat math as quite so scary; statistics and errors, which tell us the uncertainty in a measurement, give us the tools to evaluate new developments fairly.

J But most important, people have to recognize that science can be complex. If we accept only simple stories, the description will necessarily be distorted. When advances are subtle or complicated, scientists should be willing to go the extra distance to give proper explanations and the public should be more patient about the truth. Even so, some difficulties are unavoidable. Most developments reflect work in progress, so the story is complex because no one yet knows the big picture.

Questions 27-31

Choose the correct letter, A，B，C or D.

Write your answers in boxes 27-31 on your answer sheet.

27 Why the faithful science communication important?

A Science plays an increasingly significant role in people's lives.

B Science is fraught with challenges public are interested in.

C The nature of complexity in science communication leads to confusion.

D Scientific inventions are more important than ever before.

28 What is the reason that the author believe for the biggest challenges for science reporting

A phenomenon such as global warming, cancer research, diet studies are too complex

B Scientists themselves often only partly understand the Theory of Evolution

C Scientists do not totally comprehend the meaning of certain scientific evolution

D Scientists themselves often partly understand the esoteric communication nature

29 According to the 3rd paragraph, the reference to the term and example of " theory of relativity " is to demonstrate

A theory of relativity is about an invariant physical phenomenon

B common people may be misled by the inaccurate choice of scientific phrase

C the term "relativity," is designed to be misleading public

D everything is relative and there is no absolutes existence

30 Which one is a good example of appropriate word choice：

A Scientific theory for uncertainty principle

B phenomenon of Global warming

C the importance of ozone layer

D Freon's destructive process on environmental

31 What is surprising finding of the Harvard debates in the passage?

A There are equal intrinsic scientific abilities of men and women.

B The proof applied by both sides seemed to be of no big difference.

C The scientific data usually shows no substantial figures to support a debated idea.

D Social factors might have a clear connection to scientific ability.

Questions 32-35

Do the following statements agree with the information given in Reading Passage 1?

In boxes 32-35 on your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

32 "Global warming" scientifically refers to greater fluctuations in temperature and rainfall rather than a universal temperature rise.

33 More media coverage of "global warming" would help public to recognize the phenomenon.

34 Harvard debates should focus more on female scientist and male scientists

35 Public understanding and acceptance of indirect scientific evidence in all cases would lead to confusion

Questions 36-40

Complete the following summary of the paragraphs of Reading Passage, using no more than two words from the Reading Passage for each answer. Write your answers in boxes 36-40 on your answer sheet.

Science Communication is fraught with challenges that can easily distort discussions, leading to unnecessary confusion and misunderstandings. Firstly, Ambiguous 36 _____ are the source of some misunderstandings. Common people without proper training do not understand clearly or deeply a specific scientific meaning via the 37 _____ scientists often employed. Besides, the measurements any 38 _____ makes can not be confined to describe in a(n) constant 39 _____ yet the phenomenon can be. What's more, even the word "theory" can be a problem. Theories aren't necessarily shown to be correct or complete immediately since scientists often evolved better versions of specific theories, a good example can be the theory of 40 _____ Thus, most importantly people have to recognize that science can be complex.

Does An IQ Test Prove Creativity?

Everyone has creativity, some a lot more than others. The development of humans, and possibly the universe, depends on it. Yet creativity is an elusive creature. What do we mean by it? What is going on in our brains when ideas form? Does it feel the same for artists and scientists? We asked writers and neuroscientists, pop stars and AI gurus (人工智能专家) *to try to deconstruct the creative process-and learn how we can all ignite the spark within.*

A In the early 1970s, creativity was still seen as a type of intelligence. But when more subtle tests of IQ and creative skills were developed in the 1970s, particularly by the father of creativity testing, Paul Torrance, it became clear that the link was not so simple. Creative people are intelligent, in terms of IQ tests at least, but only averagely or just above. While it depends on the discipline, in general beyond a certain level IQ does not help boost creativity; it is necessary but not sufficient to make someone creative.

B Because of the difficulty of studying the actual process, most early attempts to study creativity concentrated on personality. According to creativity specialist Mark Runco of California State University, Fullerton, the "creative personality" tends to place a high value on aesthetic (审美的) qualities and to have broad interests, providing lots of resources to draw on and knowledge to recombine into novel solutions. "Creatives" have an attraction to complexity and an ability to handle conflict. They are also usually highly self-motivated, perhaps even a little obsessive. Less creative people, on the other hand, tend to become irritated (被激怒的) if they cannot immediately fit all the pieces together. They are less tolerant of confusion. Creativity comes to those who wait, but only to those who are happy to do so in a bit of a fog.

C But there may be a price to pay for having a creative personality. For centuries, a link has been made between creativity and mental illness (精神病).Psychiatrist (精神病学家) Jamison of Johns Hopkins University in Baltimore, Maryland, found that established artists are significantly more likely

to have mood disorders. But she also suggests that a change of mood state might be the key to triggering a creative event, rather than the negative mood itself. Intelligence can help channel this thought style into great creativity, but when combined with emotional problems, lateral (侧向的), divergent (发散的) or open thinking can lead to mental illness instead.

D Jordan Peterson, a psychologist at the University of Toronto, Canada, believes he has identified a mechanism (机理) that could help explain this. He says that the brains of creative people seem more open to incoming stimuli (刺激) than less creative types. Our senses are continuously feeding a mass of information into our brains, which have to block or ignore most of it to save us from being snowed under. Peterson calls this process latent inhibition, and argues that people who have less of it, and who have a reasonably high IQ with a good working memory can juggle more of the data, and so may be open to more possibilities and ideas. The downside of extremely low latent inhibition may be a confused thought style that predisposes people to mental illness. So for Peterson, mental illness is not a prerequisite for creativity, but it shares some cognitive traits.

E But what of the creative act itself? One of the first studies of the creative brain at work was by Colin Martindale, a psychologist from the University of Maine in Orono. Back in 1978, he used a network of scalp electrodes to record an electroencephalogram (脑电图),a record of the pattern of brain waves, as people made up stories. Creativity has two stages: inspiration and elaboration, each characterised by very different states of mind. While people were dreaming up their stories, he found their brains were surprisingly quiet. The dominant activity was alpha waves, indicating a very low level of cortical (大脑皮层的) arousal: a relaxed state, as though the conscious mind was quiet while the brain was making connections

behind the scenes. It's the same sort of brain activity as in some stages of sleep, dreaming or rest, which could explain why sleep and relaxation can help people be creative. However, when these quiet-minded people were asked to work on their stories, the alpha wave activity dropped off and the brain became busier, revealing increased cortical arousal, more corralling of activity and more organised thinking. Strikingly, it was the people who showed the biggest difference in brain activity between the inspiration and development stages who produced the most creative storylines. Nothing in their background brain activity marked them as creative or uncreative. "It's as if the less creative person can't shift gear," says Guy Claxton, a psychologist at the University of Bristol, UK. "Creativity requires different kinds of thinking. Very creative people move between these states intuitively." Creativity, it seems, is about mental flexibility: perhaps not a two-step process, but a toggling between two states. In a later study, Martindale found that communication between the sides of the brain is also important.

F Paul Howard-Jones, who works with Claxton at Bristol, believes he has found another aspect of creativity. He asked people to make up a story based on three words and scanned (扫描) their brains using functional magnetic resonance imaging. In one trial, people were asked not to try too hard and just report the most obvious story suggested by the words. In another, they were asked to be inventive. He also varied the words so it was easier or harder to link them. As people tried harder and came up with more creative tales, there was a lot more activity in a particular prefrontal brain (脑前额叶) region on the right-hand side. These regions are probably important in monitoring for conflict, helping us to filter out many of of combining the words and allowing us to pull out just the desirable connections, Howard-Jones suggests. It shows that there is another

side to creativity, he says. The story-making task, particularly when we are stretched, produces many options which we have to assess. So part of creativity is a conscious (有意识的) process of evaluating and analysing ideas. The test also shows that the more we try and are stretched, the more creative our minds can be.

G And creativity need not always be a solitary (孤独的, 独立的), tortured affair, according to Teresa Amabile of Harvard Business School. Though there is a slight association between solitary writing or painting and negative moods or emotional disturbances, scientific creativity and workplace creativity seem much more likely to occur when people are positive and buoyant (轻快的).In a decade-long study of real businesses, to be published soon, Amabile found that positive moods relate positively to creativity in organisations, and that the relationship is a simple linear one. Creative thought also improves people's moods, her team found, so the process is circular (循环传递的).Time pressures, financial pressures and hard-earned bonus schemes on the other hand, do not boost workplace creativity: internal motivation, not coercion, produces the best work.

H Another often forgotten aspect of creativity is social. Vera John-Steiner of the University of New Mexico says that to be really creative you need strong social networks and trusting relationships, not just active neural networks. One vital characteristic of a highly creative person, she says, is that they have at least one other person in their life who doesn't think they are completely nuts (疯子).

Questions 28-31

Do the following statement agree with the information given in Reading Passage 1?

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

28 High IQ guarantees more ability to create in one person than one with an average score.

29 For a competitive society, individuals' language proficiency is more important than the other abilities.

30 A wider range of resources and knowledge can be integrated into bringing about creative approaches.

31 A creative person not necessarily suffers more mental illness.

Questions 32-26

Use the information in the passage to match the people (listed A-F) with opinions or deeds below. Write the appropriate letters A-F in boxes 32-36 on your answer sheet.

A Jamison
B Jordan Peterson
C Guy Claxton
D Howard-Jone
E Teresa Amabile
F Vera John-Steiner

32 Instead of producing the negative mood, a shift of mood state might be the one important factor of inducing a creative thinking.

33 Where the more positive moods individuals achieve, there is higher creativity in organizations.

34 Good interpersonal relationship and trust contribute to a person with more creativity

35 Creativity demands different kinds of thinking that can be easily changed back and forth.

36 Certain creative mind can be upgraded if we are put into more practice in assessing and processing ideas.

Questions 37-40

Summary

Complete the Summary paragraph described below. In boxes 37-40 on your answer sheet, write the correct answer with no more than three words

But what of the creative act itself ? In 1978, Colin Martindale made records of pattern of brain waves as people made up stories by applying a system constituted of many 37_____ Two phrases of mind state such as 38_____are found. While people were still planning their stories, their brains shows little active sign and the mental activity was showing a very relaxed state as the same sort of brain activity as in sleep, dreaming or relaxing. However, experiment proved the signal of 39_____went down and the brain became busier revealing increased cortical arousal, when these people who are in a laidback state were required to produce their stories. Strikingly, it was found the more 40_____in brain activity between two stages, the more creative storylines people produced.

Facial expression

A A facial expression is one or more motions or positions of the muscles in the skin. These movements convey the emotional state of the individual to observers. Facial expressions are a form of nonverbal communication. They are a primary means of conveying social information among aliens, but also occur in most other mammals (哺乳动物) and some other animal species. Facial expressions and their significance in the perceiver can, to some extent, vary between cultures with evidence from descriptions in the works of Charles Darwin.

B Humans can adopt a facial expression to read as a voluntary action. However, cause expressions are closely tied to emotion, they are more often involuntary (不知不觉的). It can be nearly impossible to avoid expressions for certain emotions, even when it would be strongly desirable to do so; a person who is trying to avoid insulting an individual he or she finds highly unattractive might , nevertheless, show a brief expression of disgust before being able to reassume a neutral expression. Microexpressions(微表情)are one example of this phenomenon. The close link between emotion and expression can also work in the other direction; it has been observed that voluntarily assuming an expression can actually cause the associated emotion.

C Some expressions can be accurately interpreted even between members of different species- anger and extreme contentment (满足， 满意) being the primary examples . Others , however, are difficult to interpret even in familiar individuals. For instance, disgust and fear can be tough to tell apart. Because faces have only a limited range of movement, expressions rely upon fairly minuscule differences in the proportion and relative position of facial features, and reading them requires considerable sensitivity to same. Some faces are often falsely read as expressing some emotion, even when they are neutral, because their proportions naturally resemble those another face would temporarily assume.

D Also, a person 1s eyes reveal much about how they are feeling, or what they

are thinking. Blink rate(眨眼率)can reveal how nervous or at ease a person may be. Research by Boston College professor Joe Tecce suggests that stress levels are revealed by blink rates. He- supports his data with statistics on the relation between the blink rates of presidential candidates and their success in their races. Tecce claims that the faster blinker in the presidential debates has lost every election since 1980. Though Tecce 1 s data is interesting, it is important to recognize that non-verbal communication is multi-channeled, and focusing on only one aspect is reckless. Nervousness can also be measured by examining each candidates' perspiration, eye contact and stiffness.

E As Charles Darwin noted in his book The Expression of the Emotions in Man and Animals:the young and the old of widely different races, both with man and animals, express the same state of mind by the same movements. Still, up to the mid—20th century most anthropologists (人 类 学 家) believed that facial expressions were entirely learned and could therefore differ among cultures. Studies conducted in the 1960s by Paul Ekman eventually supported

Darwin's belief to a large degree.

F Ekman's work on facial expressions had its starting point in the work of psychologist Silvan Tomkins. Ekman showed that contrary to the belief of some anthropologists including Margaret Mead, facial expressions of emotion are not culturally determined, but universal across human cultures. The South Fore people of New Guinea were chosen as subjects for one such survey. The study consisted of 189 adults and 130 children from among a very isolated population, as well as twenty three members of the culture who lived a less isolated lifestyle as a control group. Participants were told a story that described one particular emotion; they were then shown three pictures (two for children) of facial expressions and asked to match the picture which expressed the story's emotion.

G While the isolated South Fore people could identify emotions with the same accuracy as the non-isolated control group, problems associated with the study include the fact that both fear and surprise were constantly misidentified. The study concluded that certain facial expressions correspond to particular emotions and can not be covered, regardless of cultural background, and regardless of whether or not the culture has been isolated or exposed to the mainstream.

H Expressions Ekman found to be universal included those indicating anger, disgust, fear, joy, sadness, and surprise (note that none of these emotions has a definitive social component, such as shame, pride, or schadenfreude). Findings on contempt (which is social) are less clear, though there is at least some preliminary evidence that this emotion and its expression are universally recognized. This may suggest that the facial expressions are largely related to the mind and each parts on the face can express specific emotion.

Questions 28-32

Summary

Complete the Summary paragraph described below. In boxes 28-33 on your answer sheet, write the correct answer with ***NO MORE THAN TWO WORDS***

The result of Ekman's study demonstrates that some facial expressions have something to do with 28 _____ emotions which is impossible covered, despite of 29 _____ and whether the culture has been 30 _____ or 31 _____ to the mainstream. However, fear and surprise are persistently 32 _____

Questions 33-38

The reading Passage has seven paragraphs A-H.

Which paragraph contains the following information?

Write the correct letter J-J^ in boxes 34-38 on your answer sheet.

NB You may use any letter more than once.

33 the difficulty identifying the actual meaning of facial expressions

34 the importance of culture on facial expressions

35 collected data for the research on the relation between blink and the success in elections

36 impossible to differentiate some closely related expressions

37 an indicator to reflect one's extent of nervousness

38 the relation between emotion and facial expressions

Questions 39-40

Choose two letters from the A-E

Write your answers in boxes 39-40 on your answer sheet.

Which Two of the following statements are true according to Ekman's theory?

A No evidence shows animals have their own facial expressions.

B Mind controls man's facial expressions.

C Facial expressions are concerning different cultures.

D Different spots on face convey certain state of mind.

E The definite relationship between facial expressions and state of mind exists

Memory and Age

A Aging, it is now clear, is part of an ongoing maturation process that all our organs go through. "In a sense, aging is keyed to the level of vigor of the body and the continuous interaction between levels of body activity and levels of mental activity," reports Arnold B. Scheibel, M.D., whose very academic title reflects how once far-flung domains now converge on the mind and the brain. Scheibel is professor of anatomy, cell biology, psychiatry, and behavioral sciences at the University of California at Los Angeles, and director of the university's Brain Research Institute. Experimental evidence has backed up popular assumptions that the aging mind undergoes decay analogous to that of the aging body. Younger monkeys, chimps, and lower animals consistently outperform their older colleagues on memory tests. In humans, psychologists concluded, memory and other mental functions deteriorate over time because of inevitable organic changes in the brain as neurons die off. Mental decline after young adulthood appeared inevitable.

B Equipped with imaging techniques that capture the brain in action, Stanley Rapoport, Ph.D., at the National Institutes of Health, measured the flow of blood in the brains of old and young people as they went through the task of matching photos of faces. Since blood flow reflects neuronal activity, Rapoport could compare which networks of neurons were being used by different subjects. "Even when the reaction times of older and younger subjects were the same, the neural networks they used were significantly different. The older subjects were using different internal strategies to accomplish the same result in

the same time," Rapoport says. Either the task required greater effort on the part of the older subjects or the work of neurons originally involved in tasks of that type had been taken over by other neurons, creating different networks.

C At the Georgia Institute of Technology, psychologist Timothy Salthouse, Ph.D., compared a group of very fast and accurate typists of college age with another group in their 60s. Since reaction time is faster in younger people and most people's fingers grow less nimble with age, younger typists might be expected to tap right along while the older ones fumble. But both typed 60 words a minute. The older typists, it turned out, achieved their speed with cunning little strategies that made them far more efficient than their younger counterparts: They made fewer finger movements, saving a fraction of a second here and there. They also read ahead in the text. The neural networks involved in typing appear to have been reshaped to compensate for losses in motor skills or other age changes.

D "When a rat is kept in isolation without playmates or objects to interact with, the animal's brain shrinks, but if we put that rat with 11 other rats in a large cage and give them an assortment of wheels, ladders, and other toys, we can show-after four days-significant differences in its brain," says Diamond, professor of integrative biology. Proliferating dendrites first appear in the visual association areas. After a month in the enriched environment, the whole cerebral cortex has expanded, as has its blood supply. Even in the enriched environment, rats get bored unless the toys are varied. "Animals are just like we are. They need stimulation," says Diamond.

E One of the most profoundly important mental functions is memory-notorious for its failure with age. So important is memory that the Charles A. Dana Foundation recently spent $8.4 million to set up a consortium of leading medical centers to measure memory loss and aging through brain-imaging technology, neurochemical experiments, and cognitive and psychological tests. One thing, however, is already fairly clear-many aspects of memory are not a function of age at all but of education. Memory exists in more than one form. What we call knowledge~facts~is what psychologists such as Harry P.

Bahrick, Ph.D., of Ohio Wesleyan University calls semantic memory. Events, conversations, and occurrences in time and space, on the other hand, make up episodic or event memory, which is triggered by cues from the context. If you were around in 1963 you don't need to be reminded of the circumstances surrounding the moment you heard that JFK had been assassinated. That event is etched into your episodic memory.

F When you forget a less vivid item, like buying a roll of paper towels at the supermarket, you may blame it on your aging memory. It's true that episodic memory begins to decline when most people are in their 50s, but it's never perfect at any age. "Every memory begins as an event," says Bahrick. "Through repetition, certain events leave behind a residue of knowledge, or semantic memory. On a specific day in the past, somebody taught you that two and two are four, but you've been over that information so often you don't remember where you learned it. What started as an episodic memory has become a permanent part of your knowledge base." You remember the content, not the context. Our language knowledge, our knowledge of the world and of people, is largely that permanent or semipermanent residue.

G Probing the longevity of knowledge, Bahrick tested 1,000 high school graduates to see how well they recalled their algebra. Some had completed the course as recently as a month before, others as long as 50 years earlier. He also determined how long each person had studied algebra, the grade received, and how much the skill was used over the course of adulthood. Surprisingly, a person's grasp of algebra at the time of testing did not depend on how long ago he'd taken the course—the determining factor was the duration of instruction. Those who had spent only a few months learning algebra forgot most of it within two or three years.

H In another study, Bahrick discovered that people who had taken several courses in Spanish, spread out over a couple of years, could recall, decades later, 60 percent or more of the vocabulary they learned. Those who took just one course retained only a trace after three years. "This long-term residue of knowledge remains stable over the decades, independent of the age of the

person and the age of the memory. No serious deficit appears until people get to their 50s and 60s, probably due to the degenerative processes of aging rather than a cognitive loss."

I "You could say metamemory is a byproduct of going to school," says psychologist Robert Kail, Ph.D., of Purdue University, who studies children from birth to 20 years, the time of life when mental development is most rapid. "The question-and-answer process, especially exam-taking, helps children learn—and also teaches them how their memory works This may be one reason why, according to a broad range of studies in people over 60, the better educated a person is, the more likely they are to perform better in life and on psychological tests. A group of adult novice chess players were compared with a group of child experts at the game. In tests of their ability to remember a random series of numbers, the adults, as expected, outscored the children. But when asked to remember the patterns of chess pieces arranged on a board, the children won. "Because they'd played a lot of chess, their knowledge of chess was better organized than that of the adults, and their existing knowledge of chess served as a framework for new memory," explains Kail.

J Specialized knowledge is a mental resource that only improves with time. Crystallized intelligence about one's occupation apparently does not decline at all until at least age 75, and if there is no disease or dementia, may remain even longer. Special knowledge is often organized by a process called "chunking." If procedure A and procedure B are always done together, for example, the mind may merge them into a single command. When you apply yourself to a specific interest-say, cooking—you build increasingly elaborate knowledge structures that let you do more and do it better. This ability, which is tied to experience, is the essence of expertise. Vocabulary is one such specialized form of accrued knowledge. Research clearly shows that vocabulary improves with time. Retired professionals, especially teachers and journalists, consistently score higher on tests of vocabulary and general information than college students, who are supposed to be in their mental prime.

Questions 14-17

Choose the correct letter, A, B, C or D.

Write your answers in boxes 14-17 on your answer sheet.

14 What does the experiment of typist show in the passage?

A Old people reading ability is superior

B Losses of age is inevitable

C Seasoned tactics made elders more efficient

D Old people performed poorly in driving test

15 Which is correct about rat experiment?

A Different toys have different effect for rats

B Rat's brain weight increased in both cages.

C Isolated rat's brain grows new connections

D Boring and complicated surroundings effect brain development

16 What can be concluded in chess game of children group?

A They won game with adults.

B Their organization of chess knowledge is better

C Their image memory is better than adults

D They used different part of brain when chessing

17 What is author's purpose of using "vocabulary study" at the end of passage?

A Certain people are sensitive to vocabularies while others aren't

B Teachers and professionals won by their experience

C Vocabulary memory as a crystallized intelligence is hard to decline

D Old people use their special zone of brain when study

Questions 18-23

Summary

Complete the following summary of the paragraphs of Reading Passage, using no more than two words from the Reading Passage for each answer. Write your answers in boxes 18-23 on your answer sheet.

It's long been known that 18_____declined with age. Charles A. Dana foundation invested millions of dollars to test memory decline. They used advanced technology, neurochemical experiments and ran several cognitive and 19_____experiments. Bahrick called one form " 20_____", which describes factual knowledge. Another one called " 21_____" contains events in time and space format. He conducted two experiments toward to knowledge memory's longevity, he asked 1000 candidates some knowledge of 22_____, some could even remember it decades ago. Second research of Spanish course found that multiple courses participants could remember more than half of 23_____they learned after decades, whereas single course taker only remembered as short as 3 years.

Questions 24-27

Use the information in the passage to match the people (listed A-F) with opinions or deeds below. Write the appropriate letters A-F in boxes 24-27 on your answer sheet.

A	Harry P. Bahrick
B	Arnold B. Scheibel
C	Marion Diamond
D	Timothy Salthouse
E	Stanley Rapport
F	Robert Kail

24 Examined both young and old's blood circulation of brain while testing.

25 Aging is a significant link between physical and mental activity.

26 Some semantic memory of a event fade away by repetition.

27 Rat's brain developed when put in a diverse environment.

Memory Decoding

A Try this memory test: Study each face and compose a vivid image for the person's first and last name. Rose Leo. for example, could be a rosehud（妙龄少女）and a lion. Fill in the blanks on the next page. The Examinations chool at Oxford University is an austere building of oak-paneled rooms, with large Gothic windows, and looming portraits of eminent dukes and earls. It is where generations of Oxford students have tested their memory on final exams, and it is where, last August, 34 contestants gathered at the World Memory Championships to be examined in an entirely different manner. In timed trials, contestants were challenged to look at and then recite a two-page poem, memorize rows of 40-digit numbers, recall the names of 110 people after looking at their photographs, and perform seven other feats of extraordinary retention. Some tests took just a few minutes; others lasted hours. In the 14 years since the World Memory Championships was founded, no one has memorized the order of a shuffled deck of playing cards in less than 30 seconds. That nice round number has become the four-minute mile of competitive memory; a benchmark that the world's best "mental athletes", as some of them like to be called are closing in on. Most contestants claim to have just average memories, and scientific testing confirms that they're not just being modest. Their feats are based on tricks that capitalize on how the human brain encodes information. Anyone can learn them.

B Psychologists Elizabeth Valentine and John Wilding, authors of the monograph Superior Memory, recently teamed up with Eleanor Maguire, a neuroscientist at University College London to study eight people, including Karsten, who had finished near the top of the World Memory Championships. They wondered if the contestants' brains were different in some way. The researchers put the competitors and a group of control subjects into an MRI（磁共振）machine and asked them to perform several different memory tests while their brains were being scanned. When it came to memorizing sequences of three-digit numbers, the difference between the memory contestants and the

control subjects was, as expected, immense. However, when they were shown photographs of magnified snowflakes, images that the competitors had never tried to memorize before the champions did no better than the control group. When the researchers analyzed the brain scans, they found that the memory champs were activating some brain regions that were different from those the control subjects were using. These regions, which included the right posterior hippocampus , which are known to be involved in visual memory and spatial navigation.

C It might seem odd that the memory contestants would use to visual imagery and special numbers, but the activity makes sense when their techniques are revealed. Cooke, a 23-year-old cognitive-science graduate student with a shoulder-length mop of curly hair, is a grand master of brain storage. He can memorize the order of 10 decks of playing cards in less than than an hour or one deck of cards in less than a minute. He is closing in on the 30-second deck. In the Lamb and Flag, Cooke pulled out a deck of cards and shuffled it. He held up three cards-the 7 0f spades(黑桃), the queen of clubs, and the 10 0f spades. He pointed at a fireplace and said. “Destiny’s Child is whacking Franz Schubert with handbags.” The next three cards were the king of hearts, the king of spades, and the jack of clubs. He ran over to the bar and announced, “Admiral Lord Nelson is holding a guitar upside down over there.” By now, everyone in the pub had begun to gawk. Forty-six cards and a few minutes later, Cooke ended up outside the Lamb and Flag, where he proceeded to reel off the deck’s order flawlessly.

D How did he do it? Cooke has already memorized a specific person, verb, and object that he associates with each card in the deck. For example, for the 7 0f spades, the person (or, in this case, persons) is always the singing group Destiny’s Child, the action is surviving a storm, and the image is a dinghy. The queen of clubs is always his friend Henrietta, the action is thwacking with a handbag, and the image is of wardrobes filled with designer clothes. When Cooke commits a deck to memory, he does it three cards at a time. Every three-card group forms a single image of a person doing something to an object. The

first card in the triplet becomes the person, the second the verb, the third the object. He then places those images along a specific familiar route, such as the one he took through the Lamb and Flag. In competitions, he uses an imaginary route that He has designed to be as smooth and downhill as possible. When it comes time to recall, Cooke takes a mental walk along his route and translates the images into cards. That's why the MRIs of the memory contestants showed activation in the brain areas associated with visual imagery and spatial navigation.

E The more resonant the images are, the more difficult they are to forget. But even meaningful information is hard to remember when there's a lot of it. That's why competitive memorizers place their images along an imaginary route. That technique, known as the Ioci method, reportedly originated in 477 B.C. with the Greek poet Simonides of Ceos. Simonides was the sole survivor of a roof collapse that killed all the other guests at a royal banquet. The bodies were mangled beyond recognition, but Simonides was able to reconstruct the guest list by closing his eyes and recalling each individual around the dinner table. What he had discovered was that our brains are exceptionally good at remembering images and spatial information. Evolutionary psychologists have offered an explanation: Presumably our ancestors found it important to recall where they found their last meal or the way back to the cave. After Simonides' discovery, the loci method popular across ancient Greece as a trick for memorizing speeches and texts. Aristotle wrote about it, and later a number of treatises on the art memory were published in Rome. Before printed books, the art of memory was considered a staple or classical education on a par with grammar, logic and rhetoric.

F The most famous of the naturals was the Russian journalist S. V. Shereshevski, who could recall long lists of numbers memorized decades earlier, as well as poems, strings of nonsense syllables, and just about anything

else he was asked to remember. "The capacity of his memory had no distinct limits." wrote Alexander Luria, the Russian psychologist who studied Shereshevski from the 1920s to the 1950s. Shereshevski also had synesthesia, a rare condition in which the senses become intertwined. For example, every number may be associated with a color or every word with a taste. Synesthetic reactions evoke a response in more areas of the brain, making memory easier. They also create problems. "lf I read when I am eating, I have a hard time understanding what I am reading-the taste of the food drowns out the sense." Shereshevski told Luria.

G K. Anders Ericsson, a Swedish-born psychologist at Florida State University, thinks anyone can acquire Shereshevski's skills. He cites an experiment with S. F. an undergraduate who was paid to take a standard test of memory called the digit span for one hour a day, two or three days a week. When he started, he could hold, like most people, only about seven digits in his head at any given time (conveniently, the length of a phone number). Over two years, S. F. completed 250 hours of testing. By then. he had stretched his digit span from 7 to more than 80. He had developed his own strategy for remembering based on his own experience as a competitive runner: He associated strings of random numbers with track times. For example 3,492 was remembered as "3 minutes and 49 point 2 seconds, near world-record mile time." The study of S. F. led Ericsson to believe that innately superior memory doesn't exist at all. When he reviewed original case studies of naturals, he found that exceptional memorizers were using techniques-sometimes without realizing it-and lots of practice. Often, exceptional memory was only for a single type of material, like digits. "If we look at some of these memory tasks, they're the kind of thing most people don't even waste one hour practicing, but if they wasted 50 hours, they'd be exceptional at it," Ericsson says. It would be remarkable, he adds, to find a person who is exceptional across a number of tasks. I don't think that there's any compelling evidence that there are such people."

Questions 27-30

The reading Passage has seven paragraphs A-G.

Which paragraph contains the following information ?

Write the correct letter A-G in boxes 27-30 on your answer sheet.

NB You may use any letter more than once

27 The reason why competence of super memory is significant in academic settings

28 An example of extraordinary recalling by applying designed images orders

29 Scientific experiment into Biological explanation for good memory

30 A depiction of natural ability of memory

Questions 31-35

Complete the following summary of the paragraphs of Reading Passage, using no more than three words from the Reading Passage for each answer. Write your answers in boxes 31-35 0n your answer sheet.

In World Memory Championships, 31 _____ was a limitation time for participants to remember a deck of cards. A man called Ed Cooke in a pub, spoke a string of odd words when he held 7 0f the spades (one of the three cards) was remembered as he encoded it to a 32 _____ . The superior memory skill can be traced back to Ancient Greece, the strategy was called 33 _____ . Russian journalist had a similar mental condition named 34 _____ which combined number with other senses, but Ericsson suggested that fantastic memory could be achieved by numerous 35 _____ .

Questions 36-40

Do the following statements agree with the information given in Reading Passage 1?

In boxes 36-40 0n your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

36 Two psychologists in Britain carried out an experiment which was open to question.

37 Cooke used a technique of connection with a real object and a number in the card.

38 Simonides recalled each dead guest by each unique sound which belonged to every guest.

39 Modern people's memory largely dropped because of relying too much on logic thinking.

40 Ericsson gave his consent to the opinion of John Wilding and Eleanor Maguire who did earlier experiment.

Mental Gymnastics

A The working day has just started at the head office of Barclays Bank in London. Seventeen staff are helping themselves to a buffet breakfast as young psychologist Sebastian Bailey enters the room to begin the morning's training session. But this is no ordinary training session. He's not here to sharpen their finance or management skills. He's here to exercise their brains.

B Today's workout, organized by a company called the Mind Gym in London, is entitled "having presence". What follows is an intense 90-minute session in which this rather abstract concept is gradually broken down into a concrete set of feelings, mental tricks and behaviours. At one point the bankers are instructed to shut their eyes and visualize themselves filling the room and then the building. They finish up by walking around the room acting out various levels of presence, from low-key to over the top.

C It's easy to poke fun. Yet similar mental workouts are happening in corporate seminar rooms around the globe. The Mind Gym alone offers some 70 different sessions, including ones on mental stamina, creativity for logical thinkers and "zoom learning". Other outfits draw more directly on the exercise analogy, offering "neurobics"(神经操) courses with names like "brain sets" and "cerebral fitness". Then there are books with titles like Pumping Ions, full of brainteasers that claim to "flex your mind", and software packages offering memory and spatial-awareness games:

D But whatever the style, the companies' sales pitch is invariably the same-follow our routines to shape and sculpt your brain or mind, just as you might tone and train your body. And, of course, they nearly all claim that their mental workouts draw on serious scientific research and thinking into how the brain works.

E One outfit, Brainergy of Cambridge, Massachusetts (motto: "Because your grey matter matters") puts it like this: "Studies have shown that mental exercise can cause changes in brain anatomy and brain chemistry which promote increased mental efficiency and clarity. The neuroscience is cutting-edge." And on its

website, Mind Gym trades on a quote from Susan Greenfield, one of Britain's best known neuroscientists: "It's a bit like going to the gym, if you exercise your brain it will grow."

F Indeed, the Mind Gym originally planned to hold its sessions in a local health club, until its founders realized where the real money was to be made. Modem companies need flexible, bright thinkers and will seize on anything that claims to create them, especially if it looks like a quick fix backed by science. But are neurobic workouts really backed by science? And do we need them?

G Nor is there anything remotely high-tech about what Lawrence Katz, co-author of Keep Your Brain Alive, recommends. Katz, a neurobiologist at Duke University Medical School in North Carolina, argues that just as many of us fail to get enough physical exercise, so we also lack sufficient mental stimulation to keep our brain in trim. Sure we are busy with jobs, family and housework. But most of this activity is repetitive routine. And any leisure time is spent slumped in front of the TV

H So, read a book upside down. Write or brush your teeth with your wrong hand. Feel your way around the room with your eyes shut. Sniff vanilla essence while listening intently to orchestral music. Anything, says Katz, to break your normal mental routine. 'It will help invigorate your brain, encouraging its cells to make new connections and pump out neurotrophins, substances that feed and sustain brain circuits.

I Well, up to a point it will. "What I'm really talking about is brain maintenance rather than bulking up your IQ," Katz adds. Neurobics, in other words, is about letting your brain fulfill its potential. It cannot create super-brains. Can it achieve even that much, though? Certainly the brain is an organ that can adapt to the demands placed on it. Tests on animal brain tissue, for example, have repeatedly shown that electrically stimulating the synapses that connect nerve cells thought to be crucial to learning and reasoning, makes them stronger and more responsive. Brain scans suggest we use a lot more of our grey matter when carrying out new or strange tasks than when we're doing well-rehearsed ones. Rats raised in bright cages with toys sprout more neural connections

than rats raised in bare cages- suggesting perhaps that novelty and variety could be crucial to a developing brain. Katz, And neurologists have proved time and again that people who lose brain cells suddenly during a stroke often sprout new connections to compensate for the loss-especially if they undergo extensive therapy to overcome any paralysis.

J Guy Claxton, an educational psychologist at the University of Bristol, ismisses most of' the neurological approaches as "neuro-babble". Nevertheless, there are specific mental skills we can learn, he contends. Desirable attributes such as creativity, mental flexibility, and even motivation, are not the fixed faculties that most of us think. They are thought habits can be learned. The problem, says Claxton, is that most of us never get proper training in these skills. We develop our own private set of mental strategies for tackling tasks and never learn anything explicitly. Worse still, because any learned skill- even driving a car or brushing our teeth-quickly sinks out of consciousness, we can no longer see the very thought habits we're relying upon. Our mental tools become invisible to us.

K Claxton is the academic adviser to the Mind Gym. So not surprisingly, the company espouses his solution that we must return our thought patterns to a conscious level, becoming aware of the details of how we usually think. Only then can we start to practice better thought patterns, until eventually these become our new habits. Switching metaphors, picture not gym classes, but tennis or football coaching.

L The theory itself is not new. Russian psychologists like Lev Vygotsky and Aleksandra Luria were putting forward much the same arguments in the 1930s. And various attempts have been made to put such thinking into practice. The business world is certainly familiar with a number of "better thinking" gurus such as Edward de Bono and Tony Buzan, and habit-breaking techniques like neurolinguistic programming, which combine positive thinking and persuasion.

M In practice, the training can seem quite mundane. For example, in one of the eight different creativity workouts offered by the Mind Gym-entitled "creativity for logical thinkers" one of the mental strategies taught is to make a sensible

suggestion, then immediately pose its opposite. So, asked to spend five minutes inventing a new pizza, a group soon comes up with no topping, sweet topping, cold topping, price based on time of day, flat-rate prices and so on.

N Bailey agrees that the trick is simple. But it is surprising how few such tricks people have to call upon when they are suddenly asked to be creative: "They tend to just label themselves as uncreative, not realizing that there are techniques that every creative person employs." Bailey says the aim is to introduce people to half a dozen or so such strategies in a session so that what at first seems like a dauntingly abstract mental task becomes a set of concrete, learnable behaviours. He admits this is not a short cut to genius. Neurologically some people do start with quicker circuits or greater handling capacity. However, with the right kind of training he thinks we can dramatically increase how efficiently we use it.

O It is hard to prove that the training itself is effective. How do you measure a change in an employee's creativity levels, or memory skills? But staff certainly report feeling that such classes have opened their eyes. For example, they may have felt that the only way to solve a difficult problem is to bang away at it as hard as possible. But then they learn that most creative thinkers advise taking a break and letting ideas incubate. It's a simple tactic, yet one that is rarely taught in normal life.

P So, neurological boosting or psychological training? At the moment you can pay your money and take your choice. Claxton for one believes there is no reason why schools and universities shouldn't spend more time teaching basic thinking skills, rather than trying to stuff heads with facts and hoping that effective thought habits are somehow absorbed by osmosis.

Questions 1-5

Do the following statements agree with the information given in Reading Passage 1?

In boxes l-5 on your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

1 Mind Gym coach instructed employees to imagine that they are the building.

2 Mind Gym uses the same marketing theory that is used all round

3 Susan Greenfield is the founder of Mind Gym

4 All business and industries are using Mind Gym's session globally

5 According to Mind Gym, there is extensive scientific background to support their session.

Questions 6-13

Use the information in the passage to match the people (listed A-D) with opinions or deeds below. Write the appropriate letters A-D in boxes 6-13 on your answer sheet.

A Guy Claxton
B Sebastian Bailey
C Susan Greenfield
D Lawrence Katz

NB You may use any letter more than once

6 We do not have enough inspiration to keep our brain fit

7 The more you exercise your brain like exercise in the gym, the more brain will grow.

8 Exercise can keep your brain health instead of improving someone's IQ

9 It is valuable for schools to teach students about creative skills besides basic known knowledge.

10 We can develop new neuron connections when we lose old connections via certain treatment.

11 People usually mark themselves as not creative before figuring out there are approaches for each person.

12 An instructor in Mind Gym who guided the employees to exercise

13 Majority of people don't have appropriate skills-training for brain.

Rulers of light

A In the blink of an eye, a wave of visible light completes a quadrillion oscillations, or cycles. That very large number presents both opportunities and a challenge. The opportunities promise numerous applications both inside and outside of laboratories. They go to the heart of our ability to measure frequencies and times with extremely high precision, a skill that scientists rely on for some of the best tests of laws of nature——and one that GPS systems, for instance, depend on. The challenge has centered on the impossibility of manipulating light with the techniques that work so well for electromagnetic waves of much lower frequencies, such as microwaves.

B Now, thanks to a decade of revolutionary advances in laser physics, researchers have at hand technologies that can unlock the latent potential that visible light's high frequencies previously kept us from realizing. In particular, scientists have developed the tools to exploit a type of laser light known as an optical frequency comb. Like a versatile ruler of light with tens or hundreds of thousands of closely spaced "tick marks," an optical frequency comb provides exquisitely precise measurements of light. Such a comb can form a bridge spanning the huge frequency gap from microwaves to visible light: very precise microwave measurements can, with an optical comb, produce equally exact data about light.

C Myriad applications are in the pipeline. Optical combs will enable a new generation of more precise atomic clocks, ultrasensitive chemical detectors and the means to control chemical reactions using lasers. The combs could greatly boost the sensitivity and range

of lidar (light detection and ranging)—and also provide a vast increase in the number of signals traveling through optical fiber.

D Combs will greatly simplify the task of measuring optical frequencies with extremely high precision. In the 20th century such a measurement would have required a team of Ph.D.s running rooms full of single-frequency lasers. Today a graduate student can achieve similar results with a simple apparatus using optical frequency combs. The new optical atomic clocks also spring from this simplification. Much as a pendulum in a grandfather clock requires gears to record its swings and slowly turn the clock's hands, an optical atomic clock uses an optical frequency comb to count the oscillations of light and convert them into a useful electronic signal. In just the past year, researchers have used optical combs to surpass the cesium-based atomic clocks that have been the best system available for decades.

E In some respects, the scene-changing advent of optical combs is similar to the leap forward that resulted from the invention of the oscilloscope about 100 years ago. That device heralded the modern age of electronics by allowing signals to be displayed directly, which facilitated development of everything from television to the iPhone. Light, however, oscillates 10,000 times faster than the speed of the fastest available oscilloscopes. With optical combs, the same capability to display the waveform is becoming available for light.

F Optical frequency comb applications require exquisite control of light across a broad spectrum of frequencies. This level of control has been available for radio waves for a long time but is only now becoming possible for light. An analogy to music helps in understanding the required level of control. Before the development of combs, lasers could produce a single color, like a single optical tone. They were akin to a violin with only one string and no fingerboard,capable of playing only one note (ignore for the moment that musical notes are much richer than pure tones). To play even a simple piece would require many different instruments, each painstakingly tuned. Each

violin would require its own musician, just as every single-frequency laser requires its own operator.

G In contrast, one operator can use an optical comb to cover the entire optical spectrum, not merely like a pianist at a piano but like a keyboardist playing an electronic synthesizer that can be programmed to mimic any musical instrument or even an entire orchestra. Comb technology, in effect, enables symphonies of hundreds of thousands of pure optical tones.

H Optical frequency combs are generated by devices called mode-locked lasers, which create ultrashort pulses of light. To understand the important features of such pulses, begin by imagining the light wave of the other chief kind of laser, a continuous-wave (CW) laser. Ideally, such a wave would be an endless stream of perfectly regular oscillations (representing the light wave's electric field), every wave crest and trough having the same amplitude and arriving at an unchanging rate. A pulse from a mode-locked laser, in contrast, is a short series of wave crests and troughs whose amplitude rises from zero to a maximum and then falls back to zero. The shortest pulses, with durations of less than 10 femtoseconds, contain just a few full oscillations of the light wave. The general outline of the pulse—its overall rise and fall—is called its envelope. One can think of the pulse as being like the earlier continuous wave (the "carrier wave"), with that wave's amplitude multiplied by the changing height of the envelope.

I The carrier wave consists of light of one pure frequency. A plot of its spectrum would have a single spike at that frequency, representing the presence of that frequency alone. You might expect that the pulse you are imagining would also consist of light only at that frequency—after all, it is just the single-frequency carrier wave with its amplitudes changed but that is not how waves and spectra work. Instead the pulse is made up of light of many frequencies all traveling

together. The frequencies form a small, continuous band centered on the carrier frequency. The shorter the pulse, the broader the spread of frequencies.

J Two additional features of the pulses emitted by mode-locked lasers are keys to the development of optical frequency combs. First, shifting the envelope a little relative to the carrier wave results in slightly different pulses. The peak of the pulse envelope may occur at the same time as a crest of the carrier, but it may also be shifted to any other stage of the oscillation. The amount of displacement is called the phase of the pulse. Second, mode-locked lasers emit trains of pulses at a very regular rate, called the repetition rate. The frequency spectrum of such a train of pulses does not form a continuum spread on each side of the carrier frequency but rather breaks into many discrete frequencies. Plotted, the spectrum looks like the teeth of a hair comb, spaced at precisely the laser's repetition rate.

Questions 1-5

Do the following statements agree with the information given in Reading Passage 1?
In boxes 1-5 on your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

1 The number of loops that a fluctuation of optical light can achieve within a really short time is too large to believe.

2 A new device makes it possible for scientists to survey the frequencies across a wide range.

3 No other surveying instruments could do a better job than the optical combs do in the next few decades.

4 The story about the optical combs resembles to that of the oscilloscope.

5 The radar waves are still in the plight that it is not applicable to have a precise control over them.

Questions 6-9

The reading Passage has seven paragraphs A-J.
Which paragraph contains the following information?
Write the correct letter A-J,, in boxes 6-9on your answer sheet. Emergency?

NB You may use the letter A-J more than once.

6 the subtle differences in the pulses caused by the little shifts of the envelope

7 a certain ratio relationship between the pulse and the range of the frequency

8 unexpected working mechanism for waves and spectra

9 a term used to depict the overview of a pulse

Questions 10-13

Complete the following summary of the paragraphs of Reading Passage, using no more than three words from the Reading Passage for each answer. Write your answers in boxes 10-13 on your answer sheet.

A key prerequisite for validates of the optical frequency combs is precise 10 _____ ranging from a wide selection of frequencies. To better understand what it means, a violin without 11 _____ can help describe the case. Likewise, specific manipulator is required for each 12 _____ while the availability of optical combs makes 13 _____ comprising several optical tones possible.

Shannon: information theory

A A satellite in the solar system got pictures of Jupiter and Saturn and the pictures were meant to be sent back to the earth. Unfortunately, the satellite was broken so it took a while for the earth to receive the collected photographs. And eventually, the malfunctioning (出 故 障 的) satellite was off the solar system. All this information transmitting technology should be credited to Claude E. Shannon(1916-2001) and his information theory.

B Shannon was born in Petoskey, Michigan. His father, Claude Sr (1862-1934), a descendant of the early New Jersey settlers, was a self-made businessman and for a while, Judge of Probate. Shannon showed an inclination towards mechanical things. His best subjects were science and mathematics, and at home he constructed such devices as models of planes, a radio-controlled model boat and a wireless telegragh system to a friend's house half a mile away. While growing up, he worked as a messenger for Western Union. His childhood hero was Thomas Edison, who he later learned was a distant cousin. Both were descendants of John Ogden, a colonial leader and an ancestor of many distinguished people.

C Shannon first began his research in the information field just to distinguish the correctness of a piece of information. The main concepts of information theory can be grasped by considering the most widespread means of human communication: language. Two important aspects of a concise language are as follows: First, the most common words (e.g., "a", "the", "I") should be shorter than less common words(e.g., "roundabout", "generation", "mediocre"), so that sentences will not be too long. Such a tradeoff in word length is analogous to data compression and is the essential aspect of source coding. Second, if part of a sentence is unheard or misheard due to noise, e.g., a passing car, the listener should still be able to glean the meaning of the underlying message. Such robustness is as essential for an electronic communication system as it is for a language; properly building such robustness into communications is done by channel coding. Source coding and channel coding are the fundamental

concerns of information theory.

D Note that these concerns have nothing to do with the importance of messages. For example, a platitude such as "Thank you; come again" takes about as long to say or write as the urgent plea, "Call an ambulance!" while the latter may be more important and more meaningful in many contexts. Information theory, however, does not consider message importance or meaning, as these are matters of the quality of data rather than the quantity and readability of data, the latter of which is determined solely by probabilities.

E Information theory is closely associated with a collection of pure and applied disciplines that have been investigated and reduced to engineering practice under a variety of rubrics throughout the world over the past half century or more: adaptive systems, anticipatory systems, artificial intelligence, complex systems, complexity science, cybernetics (控制论), informatics, machine learning, along with systems sciences of many descriptions. Information theory is a broad and deep mathematical theory, with equally broad and deep applications, amongst which is the vital field of coding theory.

F Coding theory is concerned with finding explicit methods, called codes, of increasing the efficiency and reducing the net error rate of data communication over a noisy channel to near the limit that Shannon proved is the maximum possible for that channel. These codes can be roughly subdivided into data compression (数据压缩) (source coding) and error-correction (channel coding) techniques. The rate of transmitting information relies on the amount of noise. In the latter case, it took many years to find the methods Shannon's work proved were possible. A third class of information theory codes are cryptographic algorithms (both codes and ciphers). Concepts, methods and

results from coding theory and information theory are widely used in cryptography and cryptanalysis. See the article ban (information) for a historical application.

Information theory is also used in information retrieval, intelligence gathering, gambling, statistics, mobile phones and even in musical composition.

G A key measure of information is known as entropy (熵 , 热力学函数) , which is usually expressed by the average number of bits needed to store or communicate one symbol in a message. Entropy quantifies the uncertainty involved in predicting the value of a random variable. For example, specifying the outcome of a fair coin flip (two equally likely outcomes) provides less information (lower entropy) than specifying the outcome from a roll of a die (six equally likely outcomes). Applications of fundamental topics of information theory include lossless data compression (e.g. ZIP files), lossy (有损耗的) data compression (e.g. MP3s and JPGs), and channel coding (e.g. for Digital Subscriber Line (DSL)). The field is at the intersection of mathematics, statistics, computer science, physics, neurobiology, and electrical engineering. Its impact has been crucial to the success of the Voyager missions to deep space, the invention of the compact disc, the feasibility of mobile phones, the development of the Internet, the study of linguistics and of human perception, the understanding of black holes, and numerous other fields. Important sub-fields of information theory are source coding, channel coding, algorithmic complexity theory, algorithmic (教学的) information theory, information-theoretic security, and measures of information.

Question 27-32

The reading Passage has seven paragraphs A-G.

Which paragraph contains the following information?

Write the correct letter A-G, in boxes 27-32 on your answer sheet.

NB You may use any letter more than once.

27 the process of condensing data

28 Dispensable roles of information theory in many areas

29 Easiness of reading data

30 Numerous subjects concerning information theory

31 Charmel coding as a branch of information theory

32 Aspects specializing in coding theory

Questions 33-37

Complete the following summary of the paragraphs of Reading Passage, using no more than three words from the Reading Passage for each answer. Write your answers in boxes 33-37 on your answer sheet.

In the 33 _____ , a 34 _____ was sent to gather photographs of Jupiter and Saturn and the pictures were meant to be sent back to the earth. However, there was something unexpected with the satellite so that the photographs which were 35 _____ did not reach the earth as planned. At the end, the 36 _____ satellite went out of the solar system. Thanks to Claude E.Shannon and his information theory that the 37 _____ could contribute to accomplishing the demanding task.

Questions 38-40

Do the following statements agree with the information given in Reading Passage 3?
In boxes 38-40 on your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

38 The original purpose that drove Shannon to begin his research was to tell whether the information was correct.

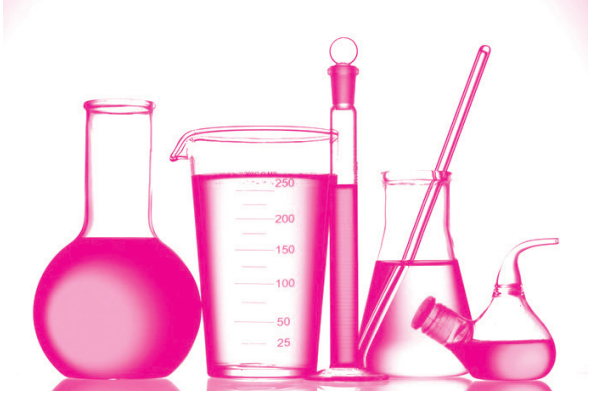
39 The amount of information through transmitting is determined by the level of noise.

40 Nearly all fields are concerning information theory.

Shannon: information theory 2

A In April 2002 an event took place which demonstrated one of the many applications of information theory. The space probe, Voyager I, launched in 1977, had sent back spectacular images of Jupiter and Saturn and then soared out of the solar System on a one-way mission to the stars. After 25 years of exposure to the freezing temperatures of deep space, the probe was beginning to show its age. Sensors and circuits were on the brink of failing and NASA experts realized that they had to do something or lose contact with their probe forever. The solution was to get a message to Voyager I to instruct it to use spares to change the failing parts. With the probe 12 billion kilometres from Earth, this was not an easy task. By means of a radio dish belonging to NASA's Deep Space Network, the message was sent out into the depths of space. Even travelling at the speed of light, it took over 11 hours to reach its target, far beyond the orbit of Pluto. Yet, incredibly, the little probe managed to hear the faint call from its home planet, and successfully made the switchover.

B It was the longest-distance repair job in history, and a triumph for the NASA engineers. But it also highlighted the astonishing power of the techniques developed by American communications engineer Claude Shannon, who had died just a year earlier. Born in 1916 in Petoskey, Michigan, Shannon showed an early talent for maths and for building gadgets and made breakthroughs in the foundations of computer technology when he was still a student. While at Bell Laboratories, Shannon developed information theory, but shunned the resulting acclaim. In the 1940s, he single-handedly created an entire science of communication which has since inveigled its way into a host of applications from DVDs to satellite communications to bar codes-any area, in short, where data has to be



conveyed rapidly yet accurately.

Information theory

Information theory lies at the heart of everything-from DVD players and the genetic code of DNA to the physics of the universe at its most fundamental. It has been central to the development of the science of communication, which enables data to be sent electronically and has therefore had a major impact on our lives.

C This all seems light years away from the down-to-earth uses Shannon originally had for his work, which began when he was a 22-year-old graduate engineering student at the prestigious Massachusetts Institute of Technology in 1939. He set out with an apparently simple aim: to pin down the precise meaning of the concept of 'information'. The most basic form of information, Shannon argued, is whether something is true or false - which can be captured in the binary unit, or "bit", of the form 1 or 0. Having identified this fundamental unit, Shannon set about defining otherwise vague ideas about information and how to transmit it from place to place. In the process he discovered something surprising: it is always possible to guarantee information will get through random interference- "noise" -intact.

D Noise usually means unwanted sounds which interfere genuine information. Information theory generalises this idea via theorems that capture the effects of noise with mathematical precision. In particular, Shannon showed that noise sets a limit on the rate which information can pass along communication channels while remaining error-free. This rate depends on the relative strengths of the signal and noise travelling down the communication channel, and on its capacity (its 'bandwidth') . The resulting limit, given in units of bits per second, is the absolute maximum rate of error-free communication given signal strength and noise level. The trick, Shannon showed, is to find ways of packaging up - 'coding' -information to cope with the ravages of noise, while staying within the information-carrying capacity- 'bandwidth' - of the communication system being used.

E Over the years scientists have devised many such coding methods, and they

have proved crucial in many technological feats. The Voyager spacecraft transmitted data using codes which added one extra bit for every single bit of information; the result was an error rate of just one bit in 10, 000-and stunningly clear pictures of the planets. Other codes have become part of everyday life-such as the Universal Product Code, or bar code, which uses a simple error-detecting system that ensures supermarket check-out lasers can read the price even on, say, a crumpled bag of crisps. As recently as 1993, engineers made a major breakthrough by discovering so-called turbo codes - which come very close to Shannon's ultimate limit for the maximum rate key role in that data can be transmitted reliably, and now play a key role in the mobile videophone revolution.

F Shannon also laid the foundations of more efficient ways of storing information, by stripping out superfluous ('redundant') bits from data which contributed little real information. As mobile phone text messages like 'I CN C U' show, it is often possible to leave out a lot of data without losing much meaning. As with error correction, however, there is a limit beyond which messages become too ambiguous, Shannon showed how to calculate this limit, opening the way to the design of compression methods that cram maximum information into the minimum space.

Question 27-32

Reading Passage 3 has six paragraphs, A-F.

Which paragraph contains the following information?

Write the correct letter A-F, in boxes 27-32 on your answer sheet.

NB you may use any letter more than once.

27 an explanation of the factors affecting the transmission of information

28 an example of how unnecessary information can be omitted

29 a reference to Shannon's attitude to being well recognised

30 details of a machine capable of interpreting incomplete information

31 a detailed account of an incident involving information theory

32 a reference to what Shannon intended to achieve in his research at the beginning

Question 33-37

Complete the following notes of the paragraphs of Reading Passage 3, using no more than three words from the Reading Passage for each answer. Write your answers in boxes 33-370n your answer sheet.

The Voyager 1 Space Probe

The probe transmitted pictures of both 33 _____ and then left the 34 _____ The freezing temperatures were found to have a negative effect on parts of the space probe. Scientists worried that both the 35 _____ and were about to stop working. The only hope was to tell the probe to replace them with 36 _____ but distance made communication with the probe difficult. A 37 _____ was used to transmit the message at the speed of light. The message was gathered by the probe and the switchover took place.

Questions 38-40

Do the following statements agree with the information given in Reading Passage 3?

In boxes 38-40 0n your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

38 The concept of describing something as true or false was the starting point for Shannon in his attempts to send messages over distances.

39 The amount of information that can be sent in a given time period is determined with reference to the signal strength and noise level.

40 Products have now been developed which can convey more information than Shannon had anticipated as possible.

Smell and Memory

Why does the scent of a fragrance (香味) *or the mouldiness* (陈腐) *of an old trunk trigger such powerful memories of childhood? New research has the answer, writes Alexandra Witze.*

A You probably pay more attention to a newspaper with your eye's than with your nose. But lift the paper to your nostrils (鼻孔) and inhale. The smell of newsprint might carry you back to your childhood, when your parents perused (精读) the paper on Sunday mornings. Or maybe some other smell takes you back-the scent of your mother's perfume, the pungency (刺激性) of a drift-wood campfire. Specific odours can spark a flood of reminiscences. Psychologists call it the " Proustian phenomenon" (涌式现象), after French novelist Marcel Proust. Near the beginning of the masterpiece In Search of Lost Time, Proust's narrator dunks (蘸) a madeleine cookie into a cup of tea - and the scent and taste unleash (释放) a torrent (连续不断的) of childhood memories for 3000 pages.

B Now, this phenomenon is getting the scientific treatment. Neuroscientists Rachel Herz, a cognitive neuroscientist at Brown University in Providence, Rhode Island, have discovered, for instance, how sensory memories are shared across the brain, with different brain regions remembering the sights, smells, tastes and sounds of a particular experience. Meanwhile, psychologists have demonstrated that memories triggered by smells can be more emotional, as well as more detailed, than memories not related to smells. When you inhale, odour molecules (分子) set brain cells dancing within a region known as the amygdala (杏仁区) , a part of the brain that helps control emotion. In contrast, the other senses, such as taste or touch, get routed through other parts of the brain before reaching the amygdala. The direct link between odours and the amygdala may help explain the emotional potency (力量) of smells. "There is this unique connection between the sense of smell and the part of the brain that processes emotion," says Rachel Herz.

C But the links don't stop there. Like an octopus (章鱼) reaching its tentacle (触须) outward, the memory of smells affects other brain regions as well. In recent experiments, neuroscientists at University College London (UCL) asked 15 volunteers to look at pictures while smelling unrelated odours. For instance, the subjects might see a photo of a duck paired with the scent of a rose, and then be asked to create a story linking the two. Brain scans taken at the time revealed that the volunteers' brains were particularly active in a region known as the olfactory cortex (嗅觉脑皮层) , which is known to be involved in processing smells. Five minutes later, the volunteers were shown the duck photo again, but without the rose smell. And in their brains, the olfactory cortex lit up again, the scientists reported recently. The fact that the olfactory cortex became active in the absence of the odour suggests that people's sensory memory of events is spread across different brain regions. Imagine going on a seaside holiday, says UCL team leader, Jay Gottfried. The sight of the waves becomes stored in one area, whereas the crash of the surf goes elsewhere, and the smell of seaweed in yet another place. There could be advantages to having memories spread around the brain. "You can reawaken that memory from any one of the sensory triggers," says Gottfried. "Maybe the smell of the sun lotion, or a particular sound from that day, or the sight of a rock formation." Or in the case of an early hunter and gatherer (out on a plain - the sight of a lion might be enough to trigger the urge to flee, rather than having to wait for the sound of its roar and the stench (恶臭) of its hide to kick in as well.

D Remembered smells may also carry extra emotional baggage, says Herz. Her research suggests that memories triggered by odours are more emotional than memories triggered by other cues. In one recent study, Herz recruited five volunteers who had vivid memories associated with a particular perfume, such as opium for Women and Juniper Breeze from Bath and Body Works. She took images of the volunteers' brains as they sniffed that perfume and an unrelated perfume without knowing which was which. (They were also shown photos of

each perfume bottle.) Smelling the specified perfume activated the volunteers brains the most, particularly in the amygdala, and in a region called the hippocampus (海马体), which helps in memory formation. Herz published the work earlier this year in the journal Neuropsychologia.

E But she couldn't be sure that the other senses wouldn't also elicit (抽 出) a strong response. So in another study Herz compared smells with sounds and pictures. She had 70 people describe an emotional memory involving three items-popcorn, fresh-cut grass and a campfire. Then they compared the items through sights, sounds and smells. For instance, the person might see a picture of a lawnmower, then sniff the scent of grass and finally listen to the lawnmower's sound. Memories triggered by smell were more evocative than memories triggered by either sights or sounds.

F Odour-evoked memories may be not only more emotional, but more detailed as well. Working with colleague John Downes, psychologist Simon Chu of the University of Liverpool started researching odour and memory partly because of his grandmothers stories about Chinese culture. As generations gathered to share oral histories, they would pass a small pot of spice or incense around; later, when they wanted to remember the story in as much detail as possible, they would pass the same smell around again. "It's kind of fits with a lot of anecdotal evidence on how smells can be really good reminders of past experiences," Chu says. And scientific research seems to bear out (证实) the anecdotes. In one experiment, Chu and Downes asked 42 volunteers to tell a life story, then tested to see whether odours such as coffee and cinnamon (肉桂皮) could help them remember more detail in the story. They could.

G Despite such studies, not everyone is convinced that Proust can be scientifically analysed. In the June issue of Chemical Senses, Chu and Downes exchanged critiques (批评) with renowned perfumer and chemist J. Stephan

Jellinek. Jellinek chided (责 备) the Liverpool researchers for, among other things, presenting the smells and asking the volunteers to think of memories, rather than seeing what memories were spontaneously evoked by the odours. But there's only so much science can do to test a phenomenon that's inherently different for each person, Chu says. Meanwhile, Jellinek has also been collecting anecdotal accounts of Proustian experiences, hoping to find some com:mon links between the experiences. "I think there is a case to be made that surprise may be a major aspect of the Proust phenomenon," he says. "That's why people are so struck by these memories." No one knows whether Proust ever experienced such a transcendental (阜越的) moment. But his notions of memory, written as fiction nearly a century ago, continue to inspire scientists of today.

Questions 14-18

Use the information in the passage to match the people (listed A-C) with opinions or deeds below. Write the appropriate letters A- C in boxes 14-18 on your answer sheet.

NB you may use any letter more than once

A Rachel Herz
B Simon Chu
C Jay Gottfried

14 Found pattern of different sensory memories stored in various zones of a brain.

15 Smell brings detailed event under a smell of certain substance.

16 Connection of smell and certain zones of brain is different with that of other senses.

17 Diverse locations of stored information help us keep away the hazard.

18 There is no necessary correlation between smell and processing zone of brain.

Questions19-22

Choose the correct letter, A, B, C or D.

Write your answers in boxes 19-22 on your answer sheet.

19 What does the experiment conducted by Herz show?

A Women are more easily addicted to opium medicine

B Smell is superior to other senses in connection to the brain

C Smell is more important than other senses

D Amygdala is part of brain that stores processes memory

20 What does the second experiment conducted by Herz suggest?

A Result directly conflicts with the first one

B Result of her first experiment is correct

C Sights and sounds trigger memories at an equal level

D Lawnmower is a perfect example in the experiment

21 What is the outcome of experiment conducted by Chu and Downes?

A smell is the only functional under Chinese tradition

B half of volunteers told detailed stories

C smells of certain odours assist story tellers

D odours of cinnamon is stronger than that of coffee

22 What is the comment of Jellinek to Chu and Downers in the issue of Chemical Senses:

A Jellinek accused their experiment of being unscientific

B Jellinek thought Liverpool is not a suitable place for experiment

C Jellinek suggested that there was no further clue of what specific memories aroused

D Jellinek stated that experiment could be remedied

Questions 23-26

Summary

Complete the following summary of the paragraphs of Reading Passage, using no more than three words from the Reading Passage for each answer. Write your answers in boxes 23-26 on your answer sheet.

In the experiments conducted by UCL, participants were asked to look at a picture with a scent of a flower, then in the next stage, everyone would have to 23 _____ for a connection. A method called 24 _____ suggested that specific area of brain named 25 _____ were quite active. Then in an another parallelled experiment about Chinese elders, storytellers could recall detailed anecdotes when smelling a bowl of 26 _____ or incense around.

The aging's brain function

A While it may not be possible to completely age-proof our brains, a brave new world of anti-aging research shows that our gray matter may be far more flexible than we thought. So no one, no matter how old, has to lose their mind. The brain has often been called the three-pound universe. It!s our most powerful and mysterious organ, the seat of the self, laced with as many billions of neurons as the galaxy has stars. No wonder the mere notion of an aging, failing brain—and the prospect of memory loss, confusion, and the unraveling of our personality—is so terrifying. As Mark Williams, M. D. , author of The American Geriatrics Society's Complete Guide to Aging and Health, says, "The fear of dementia is stronger than the fear of death itself. " Yet the degeneration of the brain is far from inevitable(必然的，不可避免的 ." Its design features are such that it should continue to function for a lifetime, " says Zaven Khachaturian, Ph.D., director of the Alzheimer's Association's Ronald and Nancy Reagan Research Institute. "There's no reason to expect it to deteriorate with age, even though many of us are living longer lives." In fact, scientists' view of the brain's potential is rapidly changing, according to Stanford University neuroscientist Robert Sapolsky, Ph.D. "Thirty-five years ago we thought Alzheimer's disease (阿兹海默疾病) was a dramatic version of normal aging (衰老 . Now we realize it1s a disease with a distinct pathology. In fact, some people simply don't experience any mental decline, so we've begun to study them." Antonio Damasio, M.D., Ph.D., head of the Department of Neurology at the University of Iowa and author of Descartes' Error, concurs. "Older people can continue to have extremely rich and healthy mental lives."

B The seniors were tested in 1988 and again in 1991. Four factors were found to be related to their mental fitness: levels of education and physical activity, lung function(肺功能), and feelings of self-efficacy. " Each of these elements alters the way our brain functions , " says Marilyn Albert, Ph.D., of Harvard Medical School, and colleagues from Yale, Duke, and Brandeis Universities

and the Mt. Sinai School of Medicine, who hypothesizes that regular exercise may actually stimulate blood flow to the brain and nerve growth, both of which create more densely branched neurons (神经元),rendering the neurons stronger and better able to resist disease. Moderate aerobic exercise, including long brisk walks and frequently climbing stairs, will accomplish this.

C Education also seems to enhance brain function. People who have challenged themselves with at least a college education may actually stimulate the neurons in their brains. Moreover, native intelligence may protect our brains. It's possible that smart people begin life with a greater number of neurons, and therefore have a greater reserve to fall back on if some begin to fail. "If you have a lot of neurons and keep them busy, you may be able to tolerate more damage to your brain before it shows," says Peter Davies, M.D., of the Albert Einstein College of Medicine in the Bronx, New York. Early linguistic ability also seems to help our brains later in life. A recent study in the New England Journal of Medicine looked at 93 elderly nuns and examined the autobiographies they had written 60 years earlier, just as they were joining a convent (女修道院). The nuns (尼姑) whose essays were complex and dense with ideas remained sharp into their eighties and nineties.

D Finally, personality seems to play an important role in protecting our mental prowess. A sense of self-efficacy may protect our brain，buffeting it from the harmful effects of stress. According to Albert, there's evidence that elevated levels of stress hormones (荷尔蒙，激素) may harm brain cells and cause the hippocampus—a small seahorse-shaped organ that's a crucial moderator of memory—to atrophy. A sense that we can effectively chart our own course in the world may retard the release of stress hormones and protect us as we age. "It's not a matter of whether you experience stress or not, " Albert concludes, "it's your attitude toward it. "Reducing stress by meditating (沉 思) on a

regular basis may buffer the brain as well. It also increases the activity of the brain's pineal gland (腺体), the source of the antioxidant hormone melatonin, which regulates sleep and may retard the aging process. Studies at the University of Massachusetts Medical Center and the University of Western Ontario found that people who meditated regularly had higher levels of melatonin than those who took 5—milligram supplements (营养补充品). Another study, conducted jointly by Maharishi International University, Harvard University, and the University of Maryland, found that seniors who meditated for three months experienced dramatic improvements in their psychological (心理学的) well-being, compared to their non-meditative peers.

E Animal studies confirm that both mental and physical activity boost brain fitness. At the Beckman Institute for Advanced Science and Technology in Urbana, Illinois, psychologist William Greenough, Ph.D., let some rats play with a profusion of toys. These rodents developed about 25 percent more connections between their neurons than did rats that didn't get any mentally stimulating recreation. In addition, rats that exercised on a treadmill (跑步机) developed more capillaries in specific parts of their brains than did their sedentary (不活动的) counterparts. This increased the blood flow to their brains. "Clearly the message is to do as many different flyings as possible," Greenough says.

F It's not just scientists who are catching anti—aging fever. Walk into any health food store, and you111 find nutritional formulas (营养配方)—with names like Brainstorm and Smart ALEC—that claim to sharpen mental ability. The book Smart Drugs & Nutrients, by Ward Dean, M. D., and John

Morgenthaler, was self-published in 1990 and has sold over 120,000 copies worldwide. It has also spawned an underground network of people tweaking their own brain chemistry with nutrients and drugs—the latter sometimes obtained from Europe and Mexico. Sales of ginkgo (银杏)—an extract (提炼物) from the leaves of the 200—million—year—old ginkgo tree, which has been shown in published studies to increase oxygen in the brain and ameliorate (改善) symptoms (症状) of Alzheimer's disease—are up by 22 percent in the last six months alone, according to Paddy Spence, president of SPINS, a San Francisco-based market research firm. Indeed, products that increase and preserve mental performance are a small but emerging segment of the supplements industry, says Linda Gilbert, president of Health Focus, a company that researches consumer health trends. While neuroscientists like Khachaturian liken the use of these products to the superstition (迷信的) of tossing salt over your shoulder, the public is nevertheless gobbling up (狼吞虎咽) nutrients that promise cognitive (认知的) enhancement.

Questions 28-31

Choose the Four correct letters among A-G

Write your answers in boxes 28-31 on your answer sheet.

Which of the ***FOUR*** situations or conditions assisting the Brains' function?

A Preventive treatment against Alzheimer's disease

B Doing active aerobic exercise and frequently climbing stairs

C High levels of education

D Early verbal or language competence training

E Having more supplements such as ginkgo tree

F Participate in more physical activity involving in stimulating tasks

G Personality and feelings of self-fulfillment

Questions 32-39

Use the information in the passage to match the people (listed A-G) with opinions or deeds below. Write the appropriate letters A-G in boxes 32-39 on your answer sheet.

NB you may use any latter more than once

A	Zaven Khachaturian
B	William Greenough
C	Marilyn Albert
D	Robert Sapolsky
E	Linda Gilbert
F	Peter Davies
G	Paddy Spence

32 Alzheimer's was probably a kind of disease rather than a normal aging process.

33 Keeping neurons busy, people may be able to endure more harm to your brain

34 Regular exercises boost blood flow to the brain and increase anti-disease disability.

35 Significant increase of Sales of ginkgo has been shown.

36 More links between their neurons are found among stimulated animals.

37 Effectiveness of the use of brains supplements products can be of little cientific proof.

38 Heightened levels of stress may damage brain cells and cause part of brain to deteriorate.

39 Products that upgrade and preserve mental competence are still a newly developing industry.

Questions 40

Choose the correct letters among A-D

Write your answers in box 40 on your answer sheet.

According the passage, what is the most appropriate title for this passage?

A Making our minds last a lifetime

B amazing pills of the ginkgo

C how to stay healthy in your old hood

D more able a brain and neurons

The beginning of intelligence

A No one doubts that intelligence develops as children grow older. Yet the oncept of intelligence has proved both quite difficult to define in unambiguous terms and unexpectedly controversial in some respects. Although, at one level, there seem to be almost as many definitions of intelligence as people who have tried to define it, there is broad agreement on two key features. That is, intelligence involves the capacity not only to learn from experience but also to adapt to one's environment. However, we cannot leave the concept there. Before turning to what is known about the development of intelligence, it is necessary to consider whether we are considering the growth of one or many skills. That question has been tackled in rather different ways by psychometricians (心理测量师) and by developmentalists.

B The former group has examined the issue by determining how children's abilities on a wide range of tasks intercorrelate, or go together. Statistical techniques have been used to find out whether the patterns are best explained by one broad underlying capacity, general intelligence, or by a set of multiple, relatively separate, special skills in domains such as verbal and visuospatial ability. While it cannot be claimed that everyone agrees on what the results mean, most people now accept that for practical purposes it is reasonable to suppose that both are involved. In brief, the evidence in favour of some kind of general intellectual capacity is that people who are superior (or inferior) on one type of task tend also to be superior (or inferior) on others. Moreover, general measures of intelligence tend to have considerable powers to predict a person's performance on a wide range of tasks requiring special skills. Nevertheless, it is plain that it is not at all uncommon for individuals to be very good at some sorts of task and yet quite poor at some others.

C Furthermore the influences that affect verbal skills are not quite the same as those that affect other skills. This approach to investigating intelligence is based on the nature of the task involved, but studies of age-related changes show that this is not the only, or necessarily the most important, approach.

For instance, some decades ago, Horn and Cattell argued for a differentiation between what they termed 'fluid' and 'crystallised' intelligence. Fluid abilities are best assessed by tests that require mental manipulation of abstract symbols. Crystallised abilities, by contrast, reflect knowledge of the environment in which we live and past experience of similar tasks; they may be assessed by tests of comprehension and information. It seems that fluid abilities peak in early adult life, whereas crystallised abilities increase up to advanced old

D Developmental studies also show that the interconnections between different skills vary with age. Thus in the first year of life an interest in perceptual patterns is a major contributor to cognitive abilities, whereas verbal abilities are more important later on. These findings seemed to suggest a substantial lack of continuity between infancy and middle childhood. However, it is important to realise that the apparent discontinuity will vary according to which of the cognitive skills were assessed in infancy. It has been found that tests of coping with novelty do predict later intelligence. These findings reinforce the view that young children's intellectual performance needs to be assessed from their interest in and curiosity about the environment, and the extent to which this is applied to new situations, as well as by standardised intelligence testing.

E These psychometric approaches have focused on children's increase in cognitive skills as they grow older. Piaget (著名儿童教育学家) brought about a revolution in the approach to cognitive development through his arguments (backed up by observations) that the focus should be on the thinking processes involved rather than on levels of cognitive achievement These ideas of Piaget gave rise to an immense body of research and it would be true to say that subsequent thinking has been heavily dependent on his genius

in opening up new ways of thinking about cognitive development. Nevertheless, most of his concepts have had to be so radically revised, or rejected, that his theory no longer provides an appropriate basis for thinking about cognitive development To appreciate why that is so, we need to focus on some rather different elements of Piaget's theorising.

F The first element, which has stood the test of time, is his view that the child is nactive agent of learning and of the importance of this activity in cognitive development Numerous studies have shown how infants actively scan their environment; how they prefer patterned to non-patterned objects, how they choose novel over familiar stimuli, and how they explore their environment as if to see how it works. Children's questions and comments vividly illustrate the ways in which they are constantly constructing schemes of what they know and trying out their ideas of how to fit new knowledge into those schemes or deciding that the schemes need modification. Moreover, a variety of studies have shown that active experiences have a greater effect on learning than comparable passive experiences. However, a second element concerns the notion that development proceeds through a series of separate stages that have to be gone through step-by-step, in a set order, each of which is characterised by a particular cognitive structure. That has turned out to be a rather misleading way of thinking about cognitive development, although it is not wholly wrong.

Questions 27-30

Choose the correct letter, A, B, C or D.

Write your answers in boxes 27-30 on your answer sheet

27 Most researchers accept that one feature of intelligence is the ability to

A change our behaviour according to our situation.

B react to others' behaviour patterns.

C experiment with environmental features.

D cope with unexpected setbacks.

28 What have psychometricians used statistics for?

A to find out if cooperative tasks are a useful tool in measuring certain skills

B to explore whether several abilities are involved in the development of intelligence

C to demonstrate that mathematical models can predict test results for different skills

D to discover whether common sense is fundamental to developing children's abilities

29 Why are Horn and Cattell mentioned?

A They disagreed about the interpretation of different intelligence tests.

B Their research concerned both linguistic and mathematical abilities.

C They were the first to prove that intelligence can be measured by testing a range of special skills.

D Their work was an example of research into how people's cognitive skills vary with age.

30 What was innovative about Piaget's research?

A He refused to accept that children developed according to a set pattern.

B He emphasised the way children thought more than how well they did in tests.

C He used visually appealing materials instead of traditional intelligence tests.

D He studied children of all ages and levels of intelligence.

Questions 31-36

Do the following statements agree with the information given in Reading Passage 3?

In boxes 31-36 on your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

31 A surprising number of academics have come to the same conclusion about what the term intelligence means.

32 A general test of intelligence is unlikely to indicate the level of performance in every type of task.

33 The elderly perform less well on comprehension tests than young adults.

34 We must take into account which skills are tested when comparing intelligence at different ages.

35 Piaget's work influenced theoretical studies more than practical research.

36 Piaget's emphasis on active learning has been discredited by later researchers.

Questions 37-40

Complete the summary using the list of words, A-I, below.

Write your answers in boxes 37-40 on your answer sheet.

Researchers investigating the development of intelligence have shown that 37 _____ skills become more significant with age. One good predictor of 38 _____ intelligence is the degree to which small children are 39 _____ about their surroundings and how much interest they show on finding themselves in an 40 _____ setting.

A adult	B practical	C verbal
D spatial	E inquisitive	F uncertain
G academic	H plentiful	I unfamiliar

The Research for Intelligence

A In Robert Plomin's line of work, patience is essential. Plomin, a behavioral geneticist at the Institute of Psychiatry in London, wants to understand the nature of intelligence. As part of his research, he has been watching thousands of children grow up. Plomin asks the children questions such as "What do water and milk have in common?" and "In what direction does the sun set?" At first he and his colleagues quizzed the children in person or over the telephone. Today many of those children are in their early teens, and they take their tests on the Internet. In one sense, the research has been a rousing success. The children who take the tests are all twins, and throughout the study identical twins have tended to get scores closer to each other than those of non-identical twins, who in turn have closer scores than unrelated children. These results—along with similar ones from other studies—make clear to the scientists that genes have an important influence on how children score on intelligence tests.

B But Plomin wants to know more. He wants to find the specific genes that are doing the influencing. And now he has a tool for pinpointing genes that he could not have even dreamed of when he began quizzing children. Plomin and his colleagues have been scanning the genes of his subjects with a device called a micro-array, a small chip that can recognize half a million distinctive snippets of DNA. The combination of this powerful tool with a huge number of children to study meant that he could detect genes that had only a tiny effect on the variation in scores.

C Still, when Plomin and his co-workers unveiled the results of their micro-array study—the biggest dragnet for intelligence-linked genes ever undertaken—they were underwhelming. The researchers found only six genetic markers that showed any sign of having an influence on the test scores. When they ran stringent statistical tests to see if the results were flukes, only one gene passed. It accounted for 0.4 percent of variation in the scores. And to cap it all off, no one knows what the gene does in the body."It's a real drag in some ways," Plomin says.

D Plomin's experience is a typical one for scientists who study intelligence. Along with using micro-arrays, they are employing brain scans and other sophisticated technologies to document some of the intricate dance steps that genes and environment take together in the development of intelligence. They are beginning to see how differences in intelligence are reflected in the structure and function of the brain. Some scientists have even begun to build a new vision of intelligence as a reflection of the ways in which information flows through the brain. But for all these advances, intelligence remains a profound mystery. "It's amazing the extent to which we know very little," says Wendy Johnson, a psychologist at the University of Minnesota.

E In some ways, intelligence is very simple. "It's something that everybody observes in others,"says Eric Turkheimer of the University of Virginia. Everybody knows that some people are smarter than others, whatever it means technically. It's something you sense in people when you talk to them. "Yet that kind of gut instinct does not translate easily into a scientific definition. In 1996 the American Psychological Association issued a report on intelligence, which stated only that "individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought."

F To measure these differences, psychologists in the early 1900s invented tests of various kinds of thought, such as math, spatial reasoning and verbal skills. To compare scores on one type of test to those on another, some psychologists developed standard scales of intelligence. The most familiar of them is the intelligence quotient,which is produced by setting the average score at 100.

IQ scores are not arbitrary numbers, however. Psychologists can use them to make strong predictions about other features of people's lives. It is possible to make reasonably good predictions, based on IQ scores in childhood, about how well people will fare in school and in the workplace. People with high IQs even tend to live longer than average."If you have an IQ score, does that tell you everything about a person's cognitive strengths and weaknesses? No," says Richard J. Haier of the University of California, Irvine. But even a simple number has the potential to say a lot about a person. "When you go see your doctor, what's the first thing that happens? Somebody takes your blood pressure and temperature. So you get two numbers. No one would say blood pressure and temperature summarize everything about your health, but they are key numbers."

G Then what underlies an intelligence score?"It's certainly tapping something," says Philip Shaw, a psychiatrist at the National Institute of Mental Health (NIMH). The most influential theory of what the score reflects is more than a century old. In 1904 psychologist Charles Spearman observed that people who did well on one kind of test tended to do well on others. The link from one score to another was not very tight, but Spearman saw enough of a connection to declare that it was the result of something he called a g factor, short for general intelligence factor. How general intelligence arose from the brain, Spearman could not say. In recent decades, scientists have searched for an answer by finding patterns in the test scores of large groups of people. Roughly speaking, there are two possible sources for these variations. Environmental influences—anything from the way children are raised by their parents to the diseases they may suffer as they develop — are one source. Genes are another. Genes may shape the brain in ways that make individuals better or worse at answering questions on intelligence tests.

Questions 1-6

The reading passage has seven paragraphs, A-G

Choose the correct heading for paragraphs B-G from the list below.

Write the correct number, i-x, in boxes 1-6 on your answer sheet.

List of Headings

i	Low probability triggers unpersuasive findings
ii	Understanding of intelligence remains limited
iii	Difficulty in accurately defining intelligence
iv	People with high IQ seldom fall sick
v	An innovative appliance to improve the probe
vi	The financial cost of a new research
vii	Why an indicator is imperfect but referable
viii	Genes mean extra when compared with environment
ix	A vital indicator for kids' intelligence performance
x	Multiple factors involved in intelligence

Example Answer

Paragraph A ix

1 Paragraph B

2 Paragraph C

3 Paragraph D

4 Paragraph E

5 Paragraph F

6 Paragraph G

Questions 7-10

Use the information in the passage to match the people (listed A-G) with opinions or deeds below. Write the appropriate letters A-G in boxes 7-10 on your answer sheet.

A	Plomin
B	Philip Shawn
C	Eric Turkheimer
D	Charles Spearman
E	Richard J. Haier
F	Wendy Johnson

7 A full conclusion can be hardly reached just by the one example in IQ test.

8 It is not easy to exclude the occasionality existed in the research.

9 Humans still have more to explore in terms of the real nature of intelligence.

10 It is quite difficult to find the real origins where the general intelligence comes.

Questions 11-13

Summary

Complete the following summary of the paragraphs of Reading Passage, using no more than three words from the Reading Passage for each answer. Write your answers in boxes 11-13 on your answer sheet.

Many researchers including Plomin have faced with the typical challenge when 11_____ are implemented. They try to use all possible methods to record certain 12_____performed both by genes and environment which contributes to the progress of intelligence. The relationship between intelligence and brain become their targeted area. What's more, according to some researchers, intelligence is regarded to be 13_____of how messages transmit in the brain.

The secret of the Yawn

A When a scientist began to study yawning in the 1980s, it was difficult to convince some of his research students of the merits of "yawning science" Although it may appear quirky(诡异的), his decision to study yawning as a logical extension to human beings of my research in developmental neuroscience, reported in such papers as "Wing-flapping during Development and Evolution". As a neurobehavioral problem, there is not much difference between the wing-flapping of birds and the face- and body-flapping of human yawners.

B Yawning is an ancient, primitive act. Humans do it even before they are born, opening wide in the womb (子宫) . Some snakes unhinge their jaws to do it. One species of penguins yawns as part of mating. Only now are researchers beginning to understand why we yawn, when we yawn and why we yawn back. A professor of cognitive neuroscience at Drexel University in Philadelphia, Steven Platek, studies the act of contagious yawning, something done only by people and other primates.

C In his first experiment, he used a psychological test to rank people on their empathic(感情移入的) feelings. He found that participants who did not score high on compassion did not yawn back. We literally had people saying, "Why am I looking at people yawning?" Professor Platek said. "It just had no effect."

D For his second experiment, he put 10 students in a magnetic resonance imaging machine as they watched video tapes of people yawning. When the students watched the videos, the part of the brain which reacted was the part scientists believe controls empathy - the posterior cingulate (皮层), in the brain's middle rear. I don't know if it's necessarily that nice people yawn more, but I think it's a good indicator of a state of mind," said

Professor Platek. "It's also a good indicator if you're empathizing with me and paying attention."

E His third experiment is studying yawning in those with brain disorders, such as autism and schizophrenia, in which victims have difficulty connecting emotionally with others. A psychology professor at the University of Maryland. Robert Provine, is one of the few other researchers into yawning. He found the basic yawn lasts about six seconds and they come in bouts with an interval of about 68 seconds. Men and women yawn or half-yawn equally often, but men are significantly less likely to cover their mouths which may indicate complex distinction in genders. "A watched yawner never yawns." Professor Provine said. However, the physical root of yawning remains a mystery. Some researchers say it's coordinated within the hypothalamus(下丘脑) of the brain, the area that also controls breathing.

F Yawning and stretching also share properties and may be performed together as parts of a global motor complex. But they do not always occur–people usually yawn when they stretch, but we don't always stretch when we yawn, especially before bedtime. Studies by J. I. P , G. H. A. Visser and H. F. Prechtl in the early 1980s, charting movement in the developing fetus using ultrasound, observed not just yawning but a link between yawning and stretching as early as the end of the first prenatal trimester (预产期).

G The most extraordinary demonstration of the yawn-stretch linkage occurs in many people paralyzed on one side of their body because of brain damage caused by a stroke. The prominent British neurologist Sir Francis Walshe noted in 1923 that when these hemiplegics yawn, they are startled and mystified to observe that their otherwise paralyzed arm rises and flexes automatically in what neurologists term an "associated response". Yawning apparently activates

undamaged, unconsciously controlled connections between the brain and the cord motor system innervating the paralyzed (瘫痪的) limb. It is not known whether the associated response is a positive prognosis for recovery, nor whether yawning is therapeutic for reinnervation(再 生) or prevention of muscular atrophy.

H Clinical neurology offers other surprises. Some patients with "locked-in" syndrome, who are almost totally deprived of the ability to move voluntarily, can yawn normally. The neural circuits for spontaneous yawning must exist in the brain stem near other respiratory and vasomotor centers, because yawning is performed by anencephalia (无脑畸形) who possess only the medulla oblongata(脊髓延髓). The multiplicity of stimuli of contagious yawning, by contrast, implicates many higher brain regions.

Questions 28-32

Summary

Complete the Summary paragraph described below. In boxes 28-32 0n your answer sheet, write the correct answer with no more than three words.

A psychology professor drew a conclusion after observation that it takes about six seconds to complete an average yawning which needs 28 _____ before a following yawning comes. It is almost at the same frequency that male and female yawn or half, yet behavior accompanied with yawning showing a 29 _____ in genders. Some parts within the brain may affect the movement which also have something to do with 30 _____ another finding also finds there is a link between yawn and 31 _____ before a baby was born, which two can be automatically co-operating even among people whose 32 _____ is damaged.

Questions 33-37

Read paragraph A-H.

Which paragraph contains the following information?

Write the correct letter A-H for question 33-37.

NB You may use any letter more than once.

33 The rate for yawning shows some regular pattern.

34 Yawning is an inherent ability that appears in both animals and humans.

35 Stretching and yawning are always going together.

36 Yawning may suggest people are having positive response in communicating.

37 Some superior areas in brain may make the yawning infectious.

Questions 38-40

Do the following statements agree with the information given in Reading Passage 3.

In boxes 38-40 0n your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

38 The subjects in Platek's experiment did not comprehend why their tutor ask them to yawn back.

39 Some results from certain experiment indicate the link between yawning and compassion.

40 Yawning shows an affirmative impact on the recovery from brain damage brought by a stroke.

We hold an opinion on Language

A It is not easy to be systematic and objective about language study. Popular linguistic debate regularly deteriorates into invective and polemic. Language belongs to everyone, so most people feel they have a right to hold an opinion about it. And when opinions differ, emotions can run high. Arguments can start as easily over minor points of usage as over major policies of linguistic education.

B Language, moreover, is a very public behaviour, so it is easy for different usages to be noted and criticised. No part of society or social behaviour is exempt: linguistic factors influence how we judge personality, intelligence, social status, educational standards, job aptitude, and many other areas of identity and social survival. As a result, it is easy to hurt, and to be hurt, when language use is unfeelingly attacked.

C In its most general sense, prescriptivism is the view that one variety of language has an inherently higher value than others, and that this ought to be imposed on the whole of the speech community. The view is propounded especially in relation to grammar and vocabulary, and frequently with reference to pronunciation. The variety which is favoured, in this account, is usually a version of the 'standard' written language, especially as encountered in literature, or in the formal spoken language which most closely reflects this style. Adherents to this variety are said to speak or write 'correctly'; deviations from it are said to be 'incorrect'.

D All the main languages have been studied prescriptively, especially in the 18th century approach to the writing of grammars and dictionaries. The aims of these early grammarians were threefold:

(a) they wanted to codify the principles of their languages, to show that there was a system beneath the apparent chaos of usage, (b) they wanted a means of settling disputes over usage, and (c) they wanted to point out what they felt to be common errors, in order to 'improve' the language. The authoritarian nature of the approach is best characterised by its reliance on 'rules7 of grammar. Some usages are 'prescribed', to be learnt and followed accurately; others are 'proscribed', to be avoided. In this early period, there were no half-measures: usage was either right or wrong, and it was the task of the grammarian not simply to record alternatives, but to pronounce judgement upon them.

E These attitudes are still with us, and they motivate a widespread concern that linguistic standards should be maintained. Nevertheless, there is an alternative point of view that is concerned less with standards than with the facts of linguistic usage. This approach is summarised in the statement that it is the task of the grammarian to describe, not prescribe-to record the facts of linguistic diversity, and not to attempt the impossible tasks of evaluating language variation or halting language change. In the second half of the 18th century, we already find advocates of this view, such as Joseph Priestley, whose Rudiments of English Grammar (1761) insists that 'the custom of speaking is the original and only just standard of any language'. Linguistic issues, it is argued, cannot be solved by logic and legislation. And this view has become the tenet of the modern linguistic approach to grammatical analysis. In our own time, the opposition between 'descriptivists' and 'prescriptivists' has often become extreme, with both sides painting unreal pictures of the other. Descriptive grammarians have been presented as people who do not care about standards, because of the way they see all forms of usage as equally valid. Prescriptive grammarians have been presented as blind adherents to a historical tradition. The opposition has even been presented in quasi-political terms-of radical liberalism elitist conservatism.

Questions 1-8

Do the following statements agree with the claims of the writer in Reading Passage 1?

In boxes 1-8 on your answer sheet, write

TRUE	*if the sataement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

1 There are understandable reasons why arguments occur about language.

2 People feel more strongly about policy of language education than about small differences in language usage.

3 Our assessment of a person's intelligence is affected by the way he or she uses language.

4 Prescriptive grammar books cost a lot of money to buy in the 18th century.

5 Prescriptivism still exists today.

6 According to descriptivists it is pointless to try to stop language change.

7 Descriptivism only appeared after the 18th century.

8 Both descriptivists and prescriptivists have been misrepresented.

Questions 9-12

Complete the summary using the list of words, A-I, below.

Write the correct letter,A-I, in boxes 9-12 on your answer sheet

The language controversy

According to 9 _____, there is only one correct form of language. Linguists who take this approach to language place great importance on grammatical 10 _____ Conversely, the view of 11 _____ , such as Joseph Priestley, is that grammar should be based on 12 _____

A	descriptivists	B	evaluation	C	rules
D	formal language	E	change	F	modern linguists
G	language experts	H	prescriptivists	I	popular speech

Question 13

Choose the correct letter,A, B, C or D.

Write the correct letter in box 13 on your answer sheet.

What is the writer's purpose in Reading Passage 1?

A to argue in favour of a particular approach to writing dictionaries and grammar books

B to present a historical account of differing views of language

C to describe the differences between spoken and written language

D to show how a certain view of language has been discredited

雅思阅读分类词汇

常见花卉

azalea 杜鹃花
begonia 秋海棠
Brazil 巴西木
cactus 仙人掌
camellia 山茶花
carnation 麝香石竹（康乃馨）
Chinese enkianthus 灯笼花
Chinese flowering crab-apple 海棠花
chrysanthemum 菊花
dahlia 大丽花
daisy 雏菊
datura 曼陀罗
epiphyllum 昙花
fringed iris 蝴蝶花
fuchsia 倒挂金钟
gardenia 栀子
India canna 美人蕉
jasmine 茉莉
lilac 丁香
lily 百合
mangnolia 木兰花
mangnolia 玉兰花
morning glory 牵牛 (喇叭花)
narcissus 水仙花
oleander 夹竹桃
orchid 兰花
pansy 三色堇
peony 牡丹
peony 芍药
phalaenopsis 蝶兰
rose 玫瑰
rose 月季
setose asparagus 文竹
touch-me-not (balsam) 凤仙花
tulip 郁金香
violet, stock violet 紫罗兰
water hyacinth 凤眼

环境问题

conservation 保护，保存
environmentalist = conservationist
acid 酸； 酸的
alkali 碱；
carbon 碳 （C）vs. charcoal （ 炭 ）
carbon dioxide, carbon monoxide
fume exhaust fumes vs. smoke, fog, smog
petroleum 石 油 petrol (BE) = gasoline/ gas (AE)
ozone 臭氧 (o + zone)ozone layer
ooze 渗出 渗出物
radiation 辐射 ultraviolet (UV) radiation~ radioactive
greenhouse 温室 greenhouse effect/gases

solar 太阳的
phenomenon 现象
catastrophe = disaster, cataclysm
deterioration 恶化
extinction 灭绝
species endangered species
drought 干旱
recurrent 反复发生的 re + (oc)cur + rent
vs. concurrent
inundate 淹没
embankment 筑堤 (em + bank + ment)
sediment 沉积（物）= deposit
delta 三角洲 the Pearl River Delta
alluvial 冲积的
desertification 沙漠化 desert vs. dessert
dust-storm 沙尘暴
barren 贫瘠的，不育的，无效的
attributable 归因于 be attributable to…
deforestation 滥砍滥伐（森林）
log 原木，日志 伐木 vs. logo
vegetation 植物，植被 vs. vegetable,
vegetarian
habitat 栖息地
ecosystem 生态系统
viability
demographic 人口统计的
interdependence
counterbalance 使平衡，弥补
mechanism 机理，机制
precipitation 陡降，降水
circulation 流通，循环
typhoon, tornado, hurricane
meteorology 气象（学）
volcano 火山
eruption 喷发 volcanic eruption
granite 花岗岩
imminent = impending vs. eminent
Celsius 摄氏的
Fahrenheit 华氏的
latitude 纬度 longitude, altitude
tropical (the) tropics tropical/torrid zone,
temperate zone, frigid zone
glacier 冰川
dump 倾倒，倾销
contaminate 弄脏
recycle 回收再利用
irreversible 不可逆的 (= irrevocable)
reclaim 开垦，改造 à reclamation
contentious 有争议的
opt 选择 n
prioritize 优先考虑

生物、生理

molecule 分子
amino acids（氨基酸）
protein 蛋白质
enzyme 酶 (proteins that are produced
by cells and act as catalysts in specific
biochemical reactions)
catalyst 催化剂
chlorophyll 叶绿素“chloro-”：

photosynthesis 光合作用 (photo + synthesis)photosynthetic
botany 植物学 botanist, botanical
flora 植物群
fauna 动物群
bacterium bacteria (pl.) 细菌
fungus fungi (pl.) 真菌
algae alga (pl.) 海藻
herb
carnation 康乃馨
fade 凋谢，褪色
organism 机体，组织
arthropod 节肢动物 vs. anthropoid
reptile 爬行动物
amphibian 两栖动物
mammal 哺乳动物
primate 灵长目动物
evolution 进化
anthropoid 类人猿（“anthrop”: human-kind) anthropology, philanthropy v.s. ape, gorilla, chimpanzee
gene 基因 DNA (deoxyribonucleic acid)
genetics 遗传学 genetical
helix 螺旋，螺旋壮物… analyze every single gene within the double helix of humanity’s DNA
identical 同一的
mutation 突变 mutable, immutable, mutant
predator 捕食者
embryo 胚胎
roe 鱼子 caviar 鱼子酱
tadpole 蝌蚪 frog, toad
caterpillar 毛毛虫 (cater + pillar)
grasshopper 蚱蜢，蝗虫 (= locust)
cricket 蟋蟀；板球
butterfly vs. moth
pollen 花粉 传粉 pollination
hive 蜂房
larva larvae (pl.) 幼虫 vs. lava
pupa 蛹
penguin 企鹅 vs. dolphin (海豚)
raccoon 浣熊 vs. kangaroo (袋鼠)
hibernate 冬眠 (=hole up)
torpid 麻木的，蛰伏的 vs. torpedo (鱼雷)
cerebral （大）脑的
hemisphere 半球 (hemi + sphere)
cortex 脑皮层
migraine 偏头疼
somatic 躯体的
limb 四肢 upper/lower limb
anatomy 解剖，剖析
paralyze 使瘫痪 (=incapacitate, immobilize)
artery 动脉 vein 静脉
gland 腺体
pancreas 胰
hormone 荷尔蒙，激素
cholesterol 胆固醇
efficacy 功效 vs. efficiency, effectiveness

心理

theorem 原理，定理 v.s. theory
methodology 方法论；
physiology 生理学；
psychiatry 精神病学
correlation 相互关系
sensation 感觉，知觉；sensational
perception 感知，认知
intuition 直觉；intuitive
ESP 第六感 Extrasensory Perception
motivate 激励 motivation
incentive 激励因素
ESP 第六感 Extrasensory Perception
motivate 激励
incentive 激励因素
stimulus 刺激
disorder 紊乱，失调
dysfunction 机能障碍
dissonance 不和谐，不一致
trauma 创伤
anxiety 焦虑 = anxiousness
depression 沮丧
insomnia 失眠
phobia 恐惧 (症) à suffix: -phobia
acrophobia 恐高症
xenophobia 仇外者，惧外者
claustrophobia 幽闭恐怖症
allergy 过敏 (症)，反感 He is allergic to card playing.
propensity 倾向 *Most boys have a propensity of playing with machinery.= tendency, inclination
paranoid 偏执的 paranoia 偏执狂
workaholic 工作狂 (alcoholic)
symptom 症状
diagnosis 诊断 (n.)
electroencephalogram 脑电图
electrocardiogram (心电图)
assertive 武断的
therapy 治疗法
hypnotism 催眠术 (~ hypnotize)
prescribe 开药方 vs. subscribe, describe,
antidepressant 抗抑郁药
tranquilizer 镇静药
side-effect (+s) 副作用
immune 免疫的，免除的
rehabilitation 复原，康复
relapse 旧病复发，故态复萌 vs. elapse 流逝（子在川上曰：逝者如斯夫，不舍昼夜！）
chronic 慢性的
adulthood 成人期
puberty 青春发动期
adolescence 青春期 (the time of life between puberty and adulthood)
emotional 情绪的
affective 情感的
sane 神智健全的 insane
superstition 迷信
telepathy 传心术，通灵术
apathy 无感情，无兴趣，冷漠 (=

indifference)
pathology 病理学，病理，病变
delusion 迷惑，欺瞒 vs. illusion
disorientation 迷失 (dis + orientation)~ disoriented
pervert 使反常 / 变态 反常 / 变态者
introspection 内省 vs. retrospection 回顾，反省
sublimation 纯化，升华
personality = personal characteristics
multiple personality 多重人格
innate 天赋的 in + nate (nature)= inborn, congenital
attribute 属性
trait 特征，品质 national traits 国民性 vs. traitor 叛逆者

文化

homogeneous 同质的 vs. homosexual, heterosexual
mainstream 主流，主流的
dialect 方言 (vs. accent)
discrepancy 差异
misconception 误解 (mis + concept + ion)= misunderstanding
barrier 障碍 (物) = barricade
discrimination 区别，歧视 racial/sexual discrimination
hierarchy 等级制度
heir +arch (govern) + y
insularity 岛国性质
*British industry has often been criticized for its linguistic insularity.
microcosm 小天地
nostalgia = homesickness
patriot 爱国者
compatriot 同胞，同胞的 com + patriot
vernacular 本地的，本国的 本地话，本国话 *the vernacular languages of India
immigration 移入~ immigrant, immigrate v.s. emigration (~ emigrant, emigrate)
Antipodes 澳大利亚和新西兰（非正式用法）
permeate 渗透，弥漫 *Smoke permeated the house.
entrepreneur 企业家 entrepreneurship
practitioner 开业者，从业者
celebrity 名人 luminary, VIP
proxy 代理人
anecdote 轶事
notoriety 恶名 notorious
counterpart 对应人，对等物 *Who's George Bush's counterpart in China? (Hu Jintao ^ ^)
peer 同等的人 凝视，窥视
subordinate 下级，下级的
tactics 战术，技巧 vs. strategy (战略，策略) marketing strategy v.s. selling tactics
nuance 细微差别
benchmarking 类比分析
punctual 准时的，守时的

absenteeism 旷工
flextime 弹性工作时间
harass 骚扰 harassment *Mary said that Gary had sexually harassed her.
redundancy 冗余，冗员
network redundancy
downsize 裁员 (~ lay off)
ballot 投票 (= vote)
impartial 不偏不倚的
lobby 大堂 (n.) 游说 (v.)
shortlist (BE) （供最后挑选或考虑的）候选人名单
equilibrium 平衡，均衡
questionnaire 调查表，问卷
quantitative 定量的 vs. qualitative
contingency 偶然性，偶然事件
incur 招致 incur debts/hatred/danger vs. occur, concur, recur
ethical 伦理的，符合伦理的
dubious 疑惑的，可疑的 *People were dubious about the result.
manifestation 显示，证明 manifest
subtitle 字幕，副标题 subsidiary, submarine, subway (BE: underground, tube), suburb(~ downtown, uptown, outskirts)
dubbing 配音录制
vogue 时尚 = chic
bizarre 奇异的 vs. weird (怪异的)
mediocre 平庸的
dietitian 饮食学家
connoisseur 行家，鉴赏家

教育

accommodation (膳宿) 供应 = room and board
lodging 寄宿 (处)
lease 出租 “for lease”，“to let” v.s. rent
tenant 房客，佃户
landlord 房东 landlady 房东太太 tenant 租客
housemate，roommate，dormmate，schoolmate, classmate
dormitory 寝室 dorm
au pair 为换取房间、住处、及学习某家语言的机会而为该家做家务的年轻外国人
reciprocal 相互的，互惠的
hostel 宿舍，客栈
youth hostel 青年旅馆
real estate 房地产
vicinity = neighborhood
flat 平的，瘪的 flat tire 公寓 = apartment vs. condo, studio
bond = deposit
linen 亚麻的 亚麻织品，床单 = bed linen
utensil 器皿
stationery 文具 vs. stationary 固定的
laundry 洗衣，洗衣店

cafeteria 自助餐厅 = canteen
cater 满足 (需要)
aerobics 有氧健身操 “aero”: air
badminton 羽毛球 (运动)
baseball 棒球 baseball bat
squash 壁球 (运动)
amateur vs. professional
gathering 聚会 v.s. meeting, reunion
excursion 远足 = outing, expedition
commonwealth 共和国，联邦
Commonwealth 英联邦
tertiary 第三的
post-secondary postgraduate, postdoctoral, post-sale, postwar
illiterate 文盲 不识字的 literacy
discipline 学科，纪律 v.s. subject
terminology 术语
faculty （大学的）系、科，全部教员
dean (大学) 教务长
curriculum 课程 extracurricular 课外的
syllabus 课程提纲
calendar 日历，日程 schedule, agenda, timetable
compulsory 强制的，必修的 elective 选修的
examiner vs. examinee
recruit 招生，招募 recruitment= enroll
prestige 声望，威信 prestigious
esteem 尊敬 n. & v.
aptitude 智力 SAT: School Aptitude Test
matriculation 录取入学
vocation 职 业 = calling, occupation, career
abbreviation 缩略 (词) abridge 缩短，删节
transferable (学分等) 可转换的
scholarship 奖学金 = fellowship
tutorial 辅 导 (课) tutor = lecturer, instructor
pedagogue 教员，学究 pedagogy 教育学，教学法
lexicography 词典编撰
assignment 任务，(课外) 作业
dissertation 论文 (= thesis)
credential 证明，文凭 credentials
alumni 校友 (男) vs. alumnae
overestimate 高估 vs. underestimate
decipher 解码，解释 = decode
caliber 才干

科技

ubiquitous 普遍存在的 = omnipresent omniscient, omnipotent
versatile (人) 多才多艺的，(物) 通用的
alchemy 炼金术
transmute 变形，变质
arduous 艰巨的 =strenuous
pitfall 陷阱，未预见之困难
metallurgy 冶金
alloy 合金

aluminum = aluminium (BE) calcium, uranium, radium, copper, brass, bronze
electrode 电极
distill 蒸馏 distilled water
quartz 石英
phosphorus 磷，磷光物质
inflammable 易燃的
combustion 燃烧
spontaneous combustion
ceramic 陶瓷的 瓷器
insulate 隔离，绝缘
insulator vs. conductor
fiber 纤维 (BE: fibre)fiber optics 纤维光学
optics 光学
retina 视网膜
iris 虹膜
opaque 不透明的 v.s. transparent, translucent
microprocessor 微处理器
binary 二进制的
buffer 缓冲区 buffer storage
browser 浏览器
hypertext 超文本
envisage 想象，看作
momentous (极为) 重要的
reticular 网状的
Ethernet 以太网
domain 域 domain names
cyberlaw 网络法律 “cyber-”: Internet related cyberlove, cybercafe, …
patent 专利
chronological 按时间顺序的
robot 机器人
artificial 人造的，做作的 artificial satellite
cone 圆锥体，锥形物
Jupiter 木星 Mercury, Venus, Mars, Saturn
exorbitant 过度的，过分的，过高的
centripetal 向心 (力) 的 centrifugal
high-rise 高楼 skyscraper
cathedral 大教堂
dome 圆顶
infrastructure 基础设施 superstructure
sewage 污水，下水道
hydraulic 水力的，水压的
landfill 垃圾掩埋 (地)
ventilation 通风
thermostat 温控器 thermos, thermometer, thermonuclear
prefabricate 预先制造
polytechnic 各种工艺的 理工学校 Hong Kong Polytechnic
geometric 几何 (学) 的 geometry
asymmetry 不对称 symmetry
concave 凹的 convex
bilateral 双边的，两方面的 unilateral
paradoxical “似非而是”的 paradox 悖论
empirical 经验的 empirical law/formula
clockwise 顺时针的 anticlockwise

火山爆发

abundant adj. 丰富的，富余的
accretion n. 增长
accumulation n. 积聚，堆积物
active volcano 活火山
Alaska Volcano Observatory 阿拉斯加州火山观察站
Aleutian Islands 阿留申群岛（环布于阿拉斯加半岛尖端的弧形岛屿）
alternating layers of lava flows 熔岩流的交互叠层
aluminum n. [化] 铝
Archean adj. [地质] 太古代的
Archeology n. 考古学
ascending adj. 上升的，向上的
ash particle 灰烬微粒
avalanche n.&v. 雪崩
awesome adj. 引起敬畏的，可怕的
basaltic lava 玄武岩火山石
basin-shaped adj. 盆状的
beat out 敲平
belated adj. 误期的，迟来的
blacksmith n. 铁匠
blanket n. 毯子，覆盖
blast n. 一股（气流），爆炸，冲击波
blob n. 一滴，水滴
blocky adj. 短而结实的，斑驳的
bombs n. 火山口喷出的大堆球状熔岩
bowl-shaped crater 碗型的火山口
bubble n. 泡沫
bulbous adj. 球根的
buoyancy n. 浮性，浮力
calcium n. [化] 钙（元素符号 ca）
caldera n. [地质] 喷火山口，凹陷处
carbon dioxide [化] 二氧化碳
carbonated soft drink 碳酸饮料
Caribbean n. 加勒比海
catastrophic adj. 悲惨的，灾难的
chimney n. 烟囱，灯罩
cinder cone 火山渣形成的圆锥体
circular depression 圆形的凹陷
circular adj. 圆形的，循环的
composite volcano 复式火山
conduit n. 导管，沟渠
conduit system 沟渠系统
cone n. 锥形物，圆锥体
congeal v.（使）冻结，（使）凝结
conical hill 圆锥型的小山
Cotopaxi n. 科多帕希火山（在厄瓜多尔北部）
coulee n. 深谷，[地质] 熔岩流
craggy adj. 陡峭的
crater n. 坑
crumple v. 弄皱，压皱
crystal adj. 结晶状的；n. 晶体
crystalline adj. 水晶的
crystallization n. 结晶化
cubic kilometer 立方公里
debris n. 碎片，残骸
demolish vt. 毁坏，破坏
dense clouds of lava fragments 浓密的火

山岩碎片
descend on 袭击
destructive power 破坏力
devastate vt. 毁坏
diameter n. 直径
dike n. 堤防
dissolved gases 稀释的气体
dome n. 圆屋顶
domical shape 圆顶型
dormancy n. 睡眠，冬眠
dormant adj. 睡眠状态的，静止的
downslope adj. 下坡的； adv. 向着坡下
Earth's crust 地壳
ejected material 喷射出来的物质
elongate v. 拉长，（使）伸长
embedded adj. 植入的，内含的
emission n.（光、热等的）散发，发射，喷射
Enceladus n. 土卫 [希神] 恩克拉多斯（反叛众神的巨人）
eon n. 永世，无数的年代
erosion n. 腐蚀，侵蚀
formation of cone 火山口的形成
lava flow 熔岩流
eruption n. 爆发，火山灰
evacuate v. 撤退
evolve v.（使）发展，（使）进展
exhume vt. 掘出，发射
fannning n. 铺开，展开
fertile adj. 肥沃的，富饶的
fissure n. 裂缝，裂沟
flank n. 侧面
flooding n. 泛滥，水灾
fluid lava flow 流动的熔岩流
folding adj. 可折叠的
force of gravity 重力，地心引力
forge v. 铸造
fracture n. 破裂
fragment n. 碎片，断片
froth n. 泡沫，废物
Fuji n. 富士山（在日本本州岛上的死火山）
funnel-shaped crater 漏斗型的火山口
gas pressure 气压
gaseous adj. 气体的，气态的
geologic adj. 地质（学）的，地质（学）上的
geologist n. 地质学者
geophysicist n. 地球物理学者
glassy adj. 像玻璃的
granitic adj. 花岗石的，由花岗岩形成的
hemisphere n. 半球
high-velocity adj. 高速的
igneous adj. 火的，似火的 [地] 火成的
imaging n.[计] 成像
imperceptible adj. 觉察不到的，感觉不到的，极细微的
incandescent adj. 遇热发光的，白炽的
inferno n. 阴间，地狱
ingredient n. 成分，因素
interfere with 妨碍

intermittently adv. 间歇地
island chain 列岛
Jupiter n. 木星
Kamchatka n. 勘察加半岛（苏联东北部）
landscape n. 风景，地形
landslide n.[山崩]，崩塌的泥石
lava dome 圆顶火山
lava plateau 火山岩高地
lava n. 熔岩，火山岩
linear chain 线形链
live in harmony with 与 ..... 和睦相处
magma n. 岩浆
magnesium n.[化] 镁
magnitude n. 量级
majestic adj. 宏伟的，庄严的
manganese n. 锰（元素符号为 Mn）
mantle composition 覆盖物的成分
Mercury n. 水星
molten v. 溶化；adj. 熔铸的
monitor n. 监视器，监控
mudflow n.[地] 泥流
Neptune n. [天] 海王星
non-explosive lava flows 非爆炸性的火山岩流
oval adj. 卵形的，椭圆的
oxygen n.[化] 氧
particle n. 粒子，微粒
pasty adj. 浆状的
Pele, Goddess of Volcanoes 火山女神
pent adj. 被关闭的，郁积的
periodic violent unleashing 周期性的猛烈释放
plain n. 平原，草原
planetary probe 行星探测器
planetary scientist 行星科学家
Pompeii n. 庞培（意大利古都，公元 79 年火山爆发，全城淹没）
population density 人口密度
potassium n. [化] 钾
precipitate n. 沉淀物；v. 使沉淀
precursory adj. 预示的，先驱的
probe n. 探测器
profile n. 剖面，侧面，外形
project v. 凸出
prominent adj. 显著的，突出的
property damage 财务损坏
pumice n. 轻石，浮石
pyroclastic flow [地质] 火成碎屑流，火山灰流
quench v. 熄灭，平息
reawaken v. 再度觉醒
reemergence n. 再度出现
reminder n. 提醒的人，暗示
reservoir n. 水库，蓄水池
resurgent adj. 复活的
rift zone 断裂区
Saturn n. [天] 土星
sculpt v. 雕刻，造型
seismograph n. 地震仪，测震仪
shatter n. 粉碎，碎片；vt. 粉碎，破坏
shield volcano 盾状火山
Sierra Nevada 内华达山脉

silicate n.[化] 硅酸盐
silicon n. [化] 硅
sloping cone 有坡度的圆锥体
sodium n.[化] 钠
solar system [天] 太阳系
solidification n. 凝固
solidify v.(使) 凝固，巩固
spine n. 脊骨，地面隆起地带
spiteful adj. 怀恨的，恶意的
steep-sided, symmetrical cone 陡峭和对称的圆锥体
steep-walled adj. 峭壁的
stratospheric winds 同温层风
stratovolcanoes n. 层云火山
succession n. 连续，连续性
sulfur dioxide n. [化] 二氧化碳
summit n. 顶点
supernatural adj. 超自然的，神奇的
sustain vt. 支撑，撑住，维持
swarm n. 一大群
swelling n. 河水猛涨，涨水
telltale remnant 证据性的残余物
terrane n. 岩石
Titan n.[希腊] 提坦，太阳神
titanium n.[化] 钛
trace n. 微量
Triton n. 海卫，[希神] 人身鱼尾的海神
tsunami n. 海啸
uplift v.& n. 升起
vegetation n. [植] 植被，（总称）植物
ventilated adj. 通风的
vent n. 通风孔，出烟孔，出口
Venus n. [罗神] 维纳斯，[天] 金星
Vesuvius n. 维苏威火山（位于意大利西南部，欧洲大陆惟一的活火山）
viscous adj. 粘性的，粘滞的
volcanic activity 火山活动
volcanic ash and dust 火山灰尘
volcanic ash 火山灰
volcanic cinders 火山灰
volcanic dust 火山尘土
volcanic eruption 火山爆发
volcanic feature 火山特征
volcanic landform 火山地形
volcanic lava dome 火山岩圆顶
volcanic terrain 火山地形
volcanic vent 火山口
volcanism n. 火山作用
volcano n. 火山
volcanologist n. 火山学家
weathering n. 侵蚀，风化
whopping adj. 巨大的，庞大的
wrathful adj. 愤怒的，激怒的
Yosemite National Park （美国加利福尼亚州中部）约塞米蒂国家公园
zircon n. 锆石

答 案

Communication in science 与科学界交流

27. A
28. C
29. B
30. D
31. B
32. YES
33. NOT GIVEN
34. NOT GIVEN
35. NO
37. word choices
38. colloquial terminology
38. observer
39. invariant description
40. (theory of) general relativity

Does An IQ Test Prove Creativity? 智商测试

28. FALSE　　题干 guarantee 错
29. NOT GIVEN
30. TRUE　　原文见 B 段第 5 行
31. TRUE　　原文见 D 段最后两行
32. A　　原文见 C 段
33. E　　原文见 G 段
34. F　　原文见 H 段
35. C　　原文见 E 段
36. D　　原文见 F 段
37. scalpel ectrodes
38. inspiration and elaboration

39. alpha wave activity/ alpha waves
40. difference

Facial expression 面部表情

28. certain
29. cultural background
30. isolated
31. exposed
32. misidentified
33. C
34. A
35. D
36. H
37. D
38. B
39. B
40 . D

Memory and Age 记忆力与年龄

Questions 14-17
14. C C 段倒数第 5 行
15. D D 段最后 1 行
16. B I 段末尾 1 句
17. C J 段第 2 行
Questions 18-23
18. Memory, E 段第 2 行
19. psychological, E 段第 7 行
20. semantic memory, E 段第 10 行
21. episodic memory/even memory, E 段第 11 行
22. algebra, G 段第 2 行

23. vocabulary H 段第 3 行

Questions 24-27

24. E B 段 1-3 行

25. B A 段第 2-3 行

26. A

27. C D 段倒数第 4 行

Memory decoding 解密记忆

27. E

28. D

29. B

30. F

31. 30 seconds

32. specific person

33. loci method

34. synesthesia

35. practice

36. YES

37. YES

38. NO

39. NOT GIVEN

40. NO

Mental gymnastics 大脑训练计划

1. FALSE

2. TRUE

3. FALSE

4. FALSE

5. NOT GIVEN

6. D

7. C

8. D

9. A

10. D

11. B

12. B

13. A

Rulers of light 光的规则

1-5

T T NG NG F

6-9

J I I H

10. control of light

11. fingerboard

12. single-frequency laser

13. symphonies

Shannon: information theory 香浓信息理论

27. C

28. G

29. D 倒数第一句

30. E 倒数第二句

31. G

32. F

33. solar system

34. satellite

35. collected

36. malfunctioning

37. information transmitting technology

38. TURE C 段开头

39. FALSE F 段第 3 句

40. NOT GIVEN 参考最后一段

Shannon: information theory 2 香浓信息理论 2

27-32

D F B E A C

33-37

33. Jupiter(and) Saturn

34. Solar system

35. Sensors (and) circuits

36. Spares

37. Radio dish

38-40

38. TRUE

39. FALSE

40. NOT GIVEN

Smell and memory 嗅觉与记忆

14. A

15. B

16. A

17. C

18. C

19. D

20. B

21. C

22. C

23. create a story

24. brain scans

25. olfactory cortex

26. spice

The aging's brain function 老人智力维持

28-31

C D F G

【D 选项见 C 段第 10 行“... Early linguistic ability also seems to help our brains later in life... ”】

【F 选项见 E 段主旨，动物实验证明的】

B 这个建议是间接地（运动）建议，来提升大脑神经，此外 选项说 active = 事实上是 moderate 适度运动

32. D：答案原文见 A 段倒数第 8 行

33. F：答案见 C 段第 7 行原文，“If you have a lot of neurons and keep them busy, you may be able to tolerate more damage to your brain before it shows,” says Peter Davies

34. C：答案见 B 段第 5-8 行原文 .

35. G

36. B

37. A : F 段倒数第 4 行，while neuroscientist like Khachaturian(A) liken the use of these products to the superstition (迷信，= 不是科学)

38. C： 答案见 D 段第三行 原文：According to Albert, there's evidence that elevated levels of stress hormones may harm brain cells and cause the hippocampus to atrophy（衰退）

39. E

40. A；B 答案（银杏）D 答案（神经元）都是细节；C 答案强调的是健康，比大脑智力范围不吻合。A 答案本来就是这篇文章的原始标题

The beginning of intelligence 早期智力发展

27. A

28. B

29. D

30. B

31. NO

32. YES

33. NO
34. YES
35. NOT GIVEN
36. NO
37. C
38. A
39. E
40. I

The Research for Intelligence 智力研究

1. v
2. i
3. ii
4. iii
5. vii
6. X
7. E
8. A
9. F
10. D
11. micro-arrays
12. intricate dance steps
13. a reflection

The secret of the yawn 哈欠的秘密

28. 68 seconds
29. （complex） distinction
30. breathing
31. stretch/stretching
32. brain
33. E

34. B
35. F
36. D
37. H
38. NOT GIVEN
39. YES
40. NO

We hold an opinion on language 语言的态度

1. TRUE
2. FALSE
3. TRUE
4. NOT GIVEN
5. TRUE
6. TRUE
7. FALSE
8. TRUE
9. H
10. C
11. A
12. I
13. B