

請務必於試卷紙上作答，違者該科不於計分。

選擇題(40*2%)

- () 1 下列關於商品名為 Iressa 肺癌藥物的敘述，何者正確？
 (a) 學名為 gefitinib
 (b) 對 small cell lung cancer 較有效
 (c) 對不抽菸之女性較無效
 (d) 需與 platinum 或 docetaxel 合併
- () 2 下列有關 Rheumatoid arthritis (RA) 敘述何者正確？1. 盛行率男多於女，且好發於年輕族群 2. 臨床症狀常見:stiffness、swelling、pain、nodules 等 3. 好發於踝或指關節處
 (a) 1+ 2 (b) 2+ 3 (c) 1+ 3 (d) 1+ 2+ 3
- () 3 有 IDDM 25-yr-old 男性其生化數值: Na 145 mEq/L, K 4.0 mEq/L, blood sugar (800 mg/dL), blood pH 7.1, bicarbonate 10 mEq/L, pCO₂ 11 mmHg, BUN 12 mg/dL, albumin 2.0 gm/dL, Ca 6.8 mg/dL, blood ethanol 100 mg/dL, blood methanol 60 mg/dL and serum osmolality 386 mOsm/kg H₂O. serum osmol gap (mOsm/kg H₂O) 為何?
 (a) 20 (b) 40 (c) 60 (d) 80
- () 4 下列哪一個敘述是錯誤的？
 (a) 紫杉醇類(Taxanes)藥物的作用機轉是抑制細胞有絲分裂時期紡錘絲的形成。
 (b) MTX (Methotrexate)在酸性環境下容易結晶，所以病患施打 MTX 前必須先以前置藥物(pre-medication)鹼化尿液，用來預防 MTX 產生結晶對腎臟造成傷害。
 (c) 病患施打化療藥物後發生紅血球低下的副作用可以用 EPO(Erythropoietin)治療。
 (d) 病患施打化療藥物後發生噁心嘔吐(Nausea and Vomiting)的副作用可以用 Dexamethasone 緩解症狀。
- () 5 依據美國高血脂症治療準則，對於合併有冠狀動脈心臟病或糖尿病之高血脂症(hyperlipidemia)患者，其理想治療目標為何？
 (a) LDL < 100 mg/dL (b) LDL < 130 mg/dL (c) LDL < 160 mg/dL (d) LDL 值未被採用為治療指標
- () 6 B.C., 56-year-old 男性, 發生過 unstable angina 並做心導管, 體重 220 lb, 6 feet 高, 腰 42 inches; 他以 simvastatin 40 mg QHS, ezetimibe 10 mg QD, ASA 325 mg QD, propranolol 40 mg BID, 及 enalapril 10 mg QD 治療, 治療後 total cholesterol, 143 mg/dL; TG, 210 mg/dL; HDL-C, 33 mg/dL; and LDL-C, 68 mg/dL, fasting glucose value 110 to 126 mg/dL, 下列之敘述何者為誤？
 (a) 具 impaired 禁食血糖
 (b) 具 Metabolic Syndrome 之 Dyslipidemia
 (c) TG levels 高表示血液中 VLDL & LDL particles 低
 (d) Niacin + statin 為適當給藥之藥物
- () 7 李小姐水瀉腹痛, stool 有血, lab data : hematocrit (Hct), 32%; hemoglobin (Hgb), 8.5 g/dL; white blood cell (WBC) count, 15,000/mm³; ESR, 70 mm/hour, 下列之敘述, 何者為誤？
 (a) 由症狀初步診斷應為 Ulcerative Colitis
 (b) Hct, Hgb 太低與 bleeding 有關
 (c) 緊急嚴重惡化時禁止投予 Corticosteroids
 (d) 可用 hydrocortisone enemas 局部給與
- () 8 下列有關高血壓的敘述, 何者正確？
 (a) 依據 JNC7, 糖尿病患者之血壓控制目標為 135/90 mmHg 以下
 (b) 孕婦高血壓的首選治療藥物為 ACE inhibitors
 (c) 血壓自 115/75 mmHg 起, 每上升 20/10 mmHg, 罹患心血管疾病的風險加倍
 (d) isolated systolic hypertension 好發於 50 歲以下
- () 9 Morphine 之 Opiate receptor 有 mu-1, mu-2, delta, sigma, kappa, epsilon, 請問何者是產生副作用的 receptor ?
 (a) mu-1, sigma (b) mu-2, sigma (c) mu-1, delta, kappa (d) mu-2, delta, kappa
- () 10 下列有關 propranolol 藥理作用的敘述, 何者錯誤？
 (a) 阻斷 β1-adrenergic receptor, 使腎臟 renin 釋放減少
 (b) 阻斷 β1 及 β2 adrenergic receptor, 使心臟收縮力減少
 (c) 高血壓患者會增加交感神經興奮性, 而使血壓升高
 (d) 阻斷 β2-adrenergic receptor, 使氣管收縮
- () 11 下列關於 ezetimibe 的敘述, 何者正確？
 (a) 屬於膽固醇吸收抑制劑
 (b) 與 statin 併用時增加肝毒性之危險
 (c) 常與 niacin 併用時增加降血脂之功能
 (d) 能改善增加病人之 HDL

- () 12 血栓的特性下列何者錯誤？
- 靜脈血栓的組成為纖維蛋白和紅血球
 - 抗凝血劑可以用來治療和預防靜脈血栓
 - 抗血小板藥物可以用來預防動脈血栓
 - 動脈粥樣硬化斑塊的剝離是形成靜脈血栓的主因
- () 13 下列敘述何者錯誤？
- Unfractionated heparin (UFH)使用前需要得知病人的 platelet count、hematocrit 以及 aPTT 值
 - 使用 UFH 時，建議 aPTT 的比值為 2.5 to 3.5
 - 要換轉至口服抗凝血劑時，UFH 需要與 Warfarin 併用至少 5 天，以達到預期的 INR 值
 - UFH 的解毒劑為 protamine sulfate
- () 14 Warfarin 的敘述何者錯誤？
- Warfarin 需要連續投與 5-7 天才能達到穩定的抗凝血作用
 - Warfarin 過量的病人，不建議以 IM 或 SC 方式施打 Vitamin K
 - 對於大部分的病人，INR 的目標值為 2-3
 - 孕婦可以安全使用
- () 15 急性心肌梗塞病患使用 ACE inhibitor，下列那一個狀況不適合使用？
- 兩側腎動脈狹窄
 - 因收縮性幫浦功能不良引起之心臟衰竭徵候
 - 左心室噴出率(ejection fraction) 小於 40%
 - 心電圖 ST 段在二個或以上的前壁導程上升
- () 16 下列有關異位性皮膚炎之敘述，何者為誤
- 為 IgE-mediated hypersensitivity
 - 兒童患病率在為 5%至 10%
 - 嬰幼兒的異位性皮膚炎症狀往往發生在頭皮，面部和彎曲表面(flexural areas)
 - 皮膚會有 Pruritus 與乾燥現象
- () 17 AML 和 ALL 的化學治療中，常見治療的相關毒性及併發症，下列何者為 ALL 常見的併發症？
- tumor lysis syndrome
 - infectious and bleeding
 - nausea 與 vomiting
 - alopecia
- () 18 57 歲男性，主訴胸痛和頭暈，血壓 118/64 mmHg，呼吸 24，EKG 顯示 torsades de pointes 下列何項治療應避免？
- magnesium sulfate
 - isoproterenol
 - procainamide
 - 電擊
- () 19 不明原因的寬的 QRS 心搏過速的第一線用藥是？
- lidocaine 1-1.5 mg/kg
 - adenosine 6mg
 - verapamil 2.5-5.0 mg
 - amiodarone 150mg IV infusion 10 min
- () 20 張先生上消化道出血，接納胃鏡作進一步評估及治療。胃鏡發現胃竇部潰瘍出血有 2 處 (0.2 和 0.4 厘米)。胃竇活檢報告為幽門螺旋桿菌陰性，最適合治療方式為下列何者
- 開始以靜脈輸注 pantoprazole 3 天，然後轉至口服 pantoprazole 40 mg BID
 - 以靜脈輸注 pantoprazole 7 天至確定無出血即可
 - 以靜脈輸注任何一種 H₂ blocker 3 天，然後轉至口服 H₂ blocker
 - 口服 H₂ blocker 即可
- () 21 下列哪一種肝硬化(cirrhosis)的發生率最高？
- 酒精造成之肝硬化
 - 膽汁性肝硬化
 - 肝細胞壞死
 - 代謝性肝硬化
- () 22 腎功能不好的病人服用下列哪一藥品會加強肝臟傷害
- Azathioprine
 - Acetaminophen
 - Tetracycline
 - Methotrexate
- () 23 病人的檢查值如下 serum creatinine (SrCr) 1.4 mg/dL, total bilirubin 18.8 mg/dL, INR 1.1, 請問此 End-Stage Liver Disease 病人 score = ? (a)18 (b)20 (c)22 (d)24
- () 24 spironolactone 常用於治療腹水(ascites)的病人，在投予 spironolactone 後多久才會產生作用
- 1 hr
 - 6 hr
 - 24 hr
 - 3 days
- () 25 腹水的患者在投予 spironolactone 後，檢查尿液發現 Na/K=0.8，則需如何處置
- 增加 spironolactone 劑量
 - 降低 spironolactone 劑量
 - 不須調整 spironolactone 劑量
 - 改換其他利尿劑
- () 26 下列有關消化道疾病與藥物治療之敘述，何者為誤？
- NOD2 gene 與 Inflammatory bowel disease 有關
 - ulcerative colitis, 會有 diarrhea 與 bleeding 現象
 - Crohn's disease 最常出現在直腸與結腸末端
 - 嚴重 Crohn's disease 最常用全身性給予 Corticosteroids 治療

- () 27 糖尿病病人血液出現酮酸血症，黏膜乾，Hct 49%此時應
 (a)給 insulin 與 fluid (b)補充 glucose (c)補充 fluid (d)給 tolazamide
- () 28 下列何種情況最適用 Cyclosporine
 (a) Crohn's disease 維持療法
 (b) ulcerative colitis 維持療法
 (c) Crohn's disease 緩解期療法
 (d) 使用 Corticosteroids 後再發之 Crohn's disease
- () 29 周女士 61 歲，無任何慢性疾病，一個月前發現乳房異常腫塊，粗針抽吸檢查結果顯示：left breast，infiltrating ductal carcinoma，ER/PR negative，HER2/neu overexpression 3+，nuclear grade 3。此病人可以使用下列何種藥品治療？
 (a) Tamoxifen (b) Leuprolide (c) Letrozole (d) Lapatinib
- () 30 臨床檢查之數據如下，下列何種情形可能為 euthyroidism:
 (a) TT4↑, RT3U↓, TSH normal (b) TT4 與 TT3 normal, FT4I, TSH ↓
 (c) TT4↑, TT3↓, TSH↑ (d) TT4↑, TT3↓, TSH↓
- () 31 下列敘述何者為誤
 (a) myxedema coma 最常出現於 hyperthyroidism
 (b) myxedema coma 應給 l-thyroxine
 (c) thyroid storm 一般須用 propranolol、propylthiouracil 治療
 (d) thyroid storm 一般須加入 iodide 治療
- () 32 下列治療 Acne(痤瘡)藥物何者非局部給予
 (a) tretinoin (Retin-A®), (b) adapalene (c) tazarotene (d) isotretinoin
- () 33 醫師欲使用 acyclovir 來治療 65 歲,身高 155 公分,體重 48 公斤之女性患者,她的血中 creatinine 值為 4 mg/dL, ALT、AST 分別為 10 與 15 U/L,請問下列敘述何者最恰當?
 (a) 病人肝功能不好
 (b) acyclovir 需依病人肝功能調整劑量
 (c) 病人腎功能正常
 (d) acyclovir 需依病人腎功能調整劑量
- () 34 張先生上消化道出血,接納胃鏡作進一步評估及治療。胃鏡發現胃竇部潰瘍出血有 2 處 (0.2 和 0.4 厘米)。胃竇活檢報告為幽門螺旋桿菌陰性，最適合治療方式為下列何者
 (a)開始以靜脈輸注 pantoprazole 3 天，然後轉至口服 pantoprazole 40 mg BID
 (b)以靜脈輸注 pantoprazole 7 天至確定無出血即可
 (c)以靜脈輸注任何一種 H₂ blocker 3 天，然後轉至口服 H₂ blocker
 (d)口服 H₂ blocker 即可
- () 35 細菌引起嚴重急性中耳炎 (severe acute otitis media, BT> 39 °C)之藥物首選為何?
 (a)高劑量 Amoxicillin (b) Cefdinir (c) Azithromycin (d) Amoxicillin-clavulanate
- () 36 下列藥物中，何者可抗黴菌，且可用於治療免疫功能不全患者食道念珠菌感染？
 (a)Gentamicin (b) Meropenem (c) Ciprofloxacin (d) Fluconazole
- () 37 血液幹細胞其細胞表面上均帶有何種抗原？因此可以利用特殊標誌染色抗體結合，作為定量及確定造血幹細胞數量的方法。
 (a) CD 8 (b) CD 20 (c) CD 34 (d) CD 52
- () 38 某名 28 歲婦女使用口服避孕藥(OC)已二年多，約六週前由於 E. coli 感染引起尿道炎，接受 Ampicillin 500mg qid 給予七天之治療，正巧與該婦女使用 OC cycle 的最初七天同時併用，試問可能產生何種影響？
 (a)降低抗生素之抗菌活性 (b)易產生 Hypermenorrhea
 (c)產生高血壓及偏頭痛的機會增加 (d)降低避孕效果
- () 39 有關抑鈣素(Calcitonin)之敘述，下列何項錯誤？
 (a) 由腎上腺分泌 (b) 其作用為抑制破骨細胞(osteoclast)活性
 (c) 男性與女性均可使用 (d) 可防止骨溶蝕作用(resorption)
- () 40 下列有關上消化道藥物治療之敘述，何者為誤？
 (a) ketoconazole 與 H₂ blocker 併用可能導致抗真菌藥治療失敗
 (b) urea breath test 用於檢查 GERD
 (c)根除幽門螺旋桿菌 (*H. pylori*) 的三合一療法中無法以 PPI+clarithromycin+amoxicillin 來治療時的第二線藥為 PPI+ Clarithromycin + Metronidazole
 (d)根除幽門螺旋桿菌 (*H. pylori*) 的三合一療法中加入 *Lactobacillus* 可增加根除率

問答題 (20 分)

1. 請敘述老年人常見之疾病與其治療之藥物

2. 請敘述糖尿病治療之口服降血糖藥物與其副作用

請務必於試卷紙上作答，違者該科不予計分。

I. SENTENCE COMPLETION: You are to choose the word or phrase that best completes the sentence. 20%

- _____ he began studying in the high school, he experienced strange health problems.
(A) Shortly before (B) Not long after (C) No sooner than (D) No longer
- She didn't work on the project yesterday, _____ work on it tomorrow.
(A) nor she will (B) nor she does (C) nor will she (D) nor does she
- _____ hardiness, orchids can be cultivated particularly easily.
(A) Their (B) Since their (C) Because of their (D) It is their
- A linguist does not merely analyze language, but is able to investigate _____ make errors.
(A) what causes language learners to (B) causes language learners to what
(C) what to cause language learners (D) what cause to language learners
- The primary activity of the panda, Yuan Zai, is sleep, _____ its waking hours looking for food.
(A) that it spends (B) for spending (C) and it spends (D) will spend
- They were running although they suspected that the shuttle bus _____.
(A) has already gone (B) was already going (C) already went (D) had already gone
- _____ the movie for years, Mrs. Holiday knew instinctively what the next crisis would be.
(A) Watch (B) Watched (C) She watched (D) Having watched
- Engines are machines _____ power or motion.
(A) produce (B) producing (C) produced (D) which produced
- Besides being expensive, the food in this restaurant tastes _____.
(A) badly (B) too much bad (C) too badly (D) bad
- Being seriously anxious, _____.
(A) we have to ask him to take medicine. (B) he went to the restroom for several times.
(C) a doctor was sent for him at once. (D) his test score was really low.

II. CLOZE TEST: This passage contains several missing words or phrases. You are to choose the best answer for each missing word or phrase in the passage. 10%

Amid leaden wintry skies, it may come as a surprise to Londoners (11) new figures suggest the city has beaten its arch rival, Paris, to become the world's most popular city for tourists. However, a growing spat between the two cities' administrations suggests that, when it comes to comparisons between London and Paris, there are only lies, damn lies and statistics.

Figures (12) this week by the UK's Office for National Statistics show that 4.9 million people visited London from July to September 2013. That was an increase of 20% on the same period in the previous year – (13) London hosted the Olympics – and a new quarterly record. Taking a wider view, for the first nine months of 2013, 12.8 million visitors (14) to the British capital, an increase of 12% compared with the previous year. The figures prompted the city's promotional body, London and Partners, to proclaim that London was "on course to welcome over 16 million visitors in one year." That in turn has led to reports in Britain and abroad that London has trumped Paris as the most visited city in the world.

The two cities have actually swapped the top spot on various lists in recent years. According to the MasterCard Global Destinations Cities Index for 2012, London narrowly beat (15) Paris for the top spot with 16.9 million visitors.

(Source: "London beats Paris as top tourist city. Really?" by Simon Busch in *CNN*, published on January 20, 2014)

- (A) but (B) and (C) or (D) so
- (A) releasing (B) is releasing (C) released (D) has released
- (A) which (B) during which (C) that (D) X
- (A) flattered (B) interceded (C) attributed (D) flocked

15. (A) out (B) on (C) in (D) up

III. WRITTEN EXPRESSION: In questions 16-20 each sentence has four underlined words or phrases. Identify the one underlined word or phrase that must be changed in order for the sentence to be correct. 10%

16. Jane Addams, pursuing social reforms and humanitarianism, founding the first charitable institution, Hull-House, in

Chicago and expertly organized civic groups to bring pressure on legislatures and government officials.

17. Behind the notion of the nuclear reactors are the release of the tremendous energy in each fission.

18. The economic development of a country lies not only in a stable basis of finance, but also on a firm foundation of industry.

19. The most living things depend on two main types of cell division, mitosis and meiosis, to reproduce themselves.

20. He has finally got used to cook on an electric stove after having a gas one for so long.

IV. COMPREHENSION QUESTION: read each passage and answer questions. 60%

READING ONE

You Just Don't Understand

- A People have different conversational styles. So when people from different parts of the country, or different ethnic or class backgrounds, talk to each other, it is likely that their words will not be understood exactly as they were meant. The desire to affirm that women are equal has made some scholars reluctant to show that they are different. There *are* gender differences in ways of speaking, and we need to identify and understand them.
- B Men often engage the world as “an individual in a hierarchical social order in which they are either one-up or one-down”, a question of gaining and keeping the upper hand. Women are more likely to approach it as “a network of connections” in which conversations are negotiations for closeness and people try to seek and give confirmation and support, and to reach consensus.
- C So, to Josh, checking with his wife about a convenient date for a dinner party resembles “seeking permission”; to Linda it is simply a recognition that lives are interwoven and complex. This is the struggle between independence and **intimacy**. The modern face of chivalry: holding the door is an act of power — showing that I (the male) grant you (the female) permission to pass through. There seems to be a male obsession with ‘freedom’ or independence. Women academics value the opportunity to pursue interests; men value the freedom from others’ control.
- D Throughout history, women have been punished physically and psychologically for talking too much, yet studies show that men talk more and for longer periods. In one study men’s turns ranged from 10.66 to 17.07 seconds, while women’s lasted from 3 to 10 seconds. The difference is that men are more comfortable with public speaking, report talk, women with private speaking, rapport talk. Rapport talk establishes relationships, seeking similarities and matching experiences. “For most men, talk is primarily a means to preserve independence and negotiate and maintain status in a hierarchical order.” Men are more likely to tell jokes in public than women: it is another way of gaining centre stage and proving their abilities.
- E Whereas women’s cooperative overlaps frequently annoy men by seeming to coopt their topic, men frequently annoy women by taking over or switching the topic. Women and men feel interrupted by each other because of the differences in what they are trying to accomplish with talk. Men who approach conversation as a contest are likely to expend effort not to support the other’s talk but to lead the conversation in another direction, perhaps one in which they can take centre stage by telling a story or joke or by displaying knowledge. Women’s effusion of support can be irritating to men who would rather meet with verbal debates.
- F Women are frequently judged differently even if they speak the same way as men. Hayes Bradley found that women using tag-questions were judged less intelligent than men who also used them. Women who did not provide evidence to support their arguments were judged less intelligent than men who did not. People asked why a baby is crying say — if it is a boy — that he is angry and — if it is a girl — that she is scared. When women and men are together, women tend to follow the topics the males want: “male-female conversations are more like men’s conversations than they are like women’s.”
- G “If you understand gender differences in what I call conversational style, you may not be able to prevent disagreements from arising, but you stand a better chance of preventing them from spiraling out of control... Understanding the other’s ways of talking is a giant leap across the communication gap between women and men, and a giant step toward opening lines of communication.”

21. The article is mainly about _____.
(A) reasons women talk differently from men
(B) ways people have different conversational style
(C) the differences between men and women using language
(D) things that make understanding opposite gender difficult
22. The main idea of Paragraph A is _____.
(A) understanding people's words is difficult
(B) understanding people of the same ethnic backgrounds is easier
(C) scholars are reluctant to show that genders are different
(D) we need to know the differences between genders in ways of speaking
23. Paragraph B is mainly about _____.
(A) the engagement of a hierarchical social order
(B) the importance of social network
(C) the gender differences regarding social relationships
(D) how men and women have different social status in speaking
24. Paragraph C is mainly about _____ existing in different genders.
(A) the struggle between independence and intimacy
(B) the difference between permission and recognition
(C) the discrepancy between power and interests
(D) the contradictory between freedom and opportunity
25. In Paragraph C, *intimacy* probably means _____.
(A) closeness (B) control (C) power (D) freedom
26. The main idea of Paragraph D is _____.
(A) women talk more than men
(B) it's a stereotype that women talk more than men
(C) men and women have different styles of talking
(D) women talk more in private, and men talk more in public
27. Which sentence from Paragraph E states the main idea?
(A) Men frequently annoy women by taking over or switching the topic.
(B) Women and men feel interrupted by each other because of the differences in what they are trying to accomplish with talk.
(C) Men are likely to expend effort not to support the other's talk but to lead the conversation in another direction.
(D) Women's effusion of support can be irritating to men who would rather meet with verbal debates.
28. Which sentence from Paragraph F states the main idea?
(A) Women are frequently judged differently even if they speak the same way as men.
(B) Women using tag-questions were judged less intelligent than men who also used them.
(C) Women who did not provide evidence to support their arguments were judged less intelligent than men who did not.
(D) Male-female conversations are more like men's conversations than they are like women's.
29. Which of the following is a logical inference based on Paragraph F?
(A) People have stereotype regarding gender differences in speaking.
(B) Women use tag-questions more than men do.
(C) Men talk with evidence more than women do.
(D) Boys have bad temper than girls do.
30. Paragraph G is mainly about _____.
(A) the importance of understanding the differences of gender in conversational style
(B) the disagreements existing in the communication gap between women and men
(C) the giant communication gap between women and men
(D) the ways of understanding a giant leap and step in communication

READING TWO

Slow Down! Why Some Languages Sound So Fast

A It's an almost universal truth that any language you don't understand sounds like it's being spoken at 200 m.p.h. — a storm of alien syllables almost impossible to tease apart. That, we tell ourselves, is simply because the words make no sense to us. Surely our spoken English sounds just as fast to a native speaker of Urdu. And yet it's equally true that some languages seem to zip by faster than others. Spanish blows the doors off French; Japanese leaves German in the dust — or at least that's how they sound.

B But how could that be? The dialogue in movies translated from English to Spanish doesn't whiz by in half the original time after all, which is what it should if the same lines were being spoken at double time. Similarly, Spanish films don't take four hours to unspool when they're translated into French. Somewhere among all the languages must be a great equalizer that keeps us conveying information at the same rate even if the speed limits vary from **tongue** to tongue.

C To investigate this puzzle, researchers from the Université de Lyon recruited 59 male and female volunteers who were native speakers of one of seven common languages — English, French, German, Italian, Japanese, Mandarin and Spanish — and one not so common one: Vietnamese. All of them were instructed to read 20 different texts, including the one about the house cat and the locked door, into a recorder. All of the volunteers read all 20 passages in their native languages. Any silences that lasted longer than 150 milliseconds were edited out, but the recordings were left otherwise untouched.

D The investigators next counted all of the syllables in each of the recordings and further analyzed how much meaning was packed into each of those syllables. A single-syllable word like *bliss*, for example, is rich with meaning — signifying not ordinary happiness but a particularly serene and rapturous kind. The single-syllable word *to* is less information-dense. And a single syllable like the short *i* sound, as in the word *jubilee*, has no independent meaning at all.

E With this raw data in hand, the investigators crunched the numbers together to arrive at two critical values for each language: the average information density for each of its syllables and the average number of syllables spoken per second in ordinary speech. Vietnamese was used as a reference language for the other seven, with its syllables (which are considered by linguists to be very information-dense) given an arbitrary value of 1.

F For all of the other languages, the researchers discovered, the more data-dense the average syllable was, the fewer of those syllables had to be spoken per second — and thus the slower the speech. English, with a high information density of .91, was spoken at an average rate of 6.19 syllables per second. Mandarin, which topped the density list at .94, was the spoken slowpoke at 5.18 syllables per second. Spanish, with a low-density .63, ripped along at a syllable-per-second velocity of 7.82. The true speed demon of the group, however, was Japanese, which edged past Spanish at 7.84, thanks to its low density of .49. Despite those differences, at the end of, say, a minute of speech, all of the languages would have conveyed more or less identical amounts of information.

G "A tradeoff is operating between a syllable-based average information density and the rate of transmission of syllables," the researchers wrote. "A dense language will make use of fewer speech chunks than a **sparser** language for a given amount of semantic information." In other words, your ears aren't deceiving you: Spaniards really do **sprint** and Chinese really do stroll, but they will tell you the same story in the same (39) of time.

H None of that, of course, makes the skull-cracking business of trying to learn a new language any easier. It does, however, serve as one more reminder that beneath all of the differences that separate Tagalog from Thai, from Norwegian, from Wolof, from any one of the world's 6,800 other languages, lie some very simple, very common rules. The DNA of speech — like our actual DNA — makes us a lot closer to one another than we think.

(Source: "Slow Down! Why Some Languages Sound So Fast" by Jeffrey Kluger in *Time*, published on September 8, 2011)

31. In Paragraph B, *tongue* probably means _____.

- (A) an organ (B) a language (C) a mouth (D) a word

32. In Paragraph G, *sparse* probably means _____.

- (A) little (B) abundant (C) ancient (D) diverse

33. In Paragraph G, *sprint* probably means _____.

- (A) wander (B) spat (C) run (D) roam

34. One word is missing in Paragraph G. Which of the following can make the sentence meaningful?

- (A) way (B) number (C) line (D) span

35. Regarding the speed limits of languages, which of the following is not true?
- (A) The speed of spoken Mandarin is faster than that of English.
 - (B) The speed of spoken Urdu is as fast as that of English.
 - (C) The speed of spoken Spanish is faster than that of French.
 - (D) The speed of spoken German is slower than that of Japanese.
36. Which of the following descriptions about the study mentioned in the article is correct?
- (A) Because a two-hour Spanish film is always translated into a four-hour French one, a group of researchers conducted the research.
 - (B) The study recruited subjects who could speak at least two languages.
 - (C) Mandarin is a common language, and so is Italian.
 - (D) All the silences were excluded from the experiment.
37. Which language was used as a reference language for the study?
- (A) English (B) Spanish (C) Mandarin (D) Vietnamese
38. Researchers of the study collected two critical values for each language they investigated. What were they?
- (A) the number of raw data and the information density for each syllable
 - (B) the information density for each syllable and the number of syllables spoken per second
 - (C) the number of raw data and the number of syllables spoken per second
 - (D) None of the above.
39. What was the finding of the study?
- (A) The shorter a syllable is, the more meaning it carries.
 - (B) Each Spanish syllable carries more information than each English syllable does.
 - (C) The number of raw data for Mandarin is higher than that for Spanish.
 - (D) All languages would have carried more or less identical amounts of information during the same amount of time.
40. Which language is easier to learn?
- (A) the one which bears less information in a sentence
 - (B) the one which is spoken in a relatively slow way
 - (C) the one whose DNA is closer to our body's DNA
 - (D) none of the above

READING THREE

British Education System

- A Education in the UK is **compulsory**. Children are legally obliged to attend school from the ages of 5 (4 in Northern Ireland) to 16. In 1992 there were 9.5 million full-time school/college students.
- B Parents can choose between ending their children to state schools or to private schools. State schools are funded by local and central government. About 93% of pupils receive free education from the public sector. The government also sometimes assists schools established by religious groups.
- C Since 1993, parents have the right to express a preference for a particular state school for their children. A system of “**league tables**” – comparative tables which rank schools according to public examination results, truancy rates, destinations of school leavers, and so on – are published in order to help parents make choices. While children usually attend the school they live closest to, now ambitious parents sometimes move to a different neighborhood in order to be close to a well-performing school. Needless to say, good schools tend to be in middle class neighborhoods and it is the wealthier middle classes who can most easily afford to move if they think it is necessary.
- D In the private sector there are independent schools which are commonly, but confusingly, called public schools. (They are called public schools because they were originally seen as “public” alternatives to having private tutors in aristocratic households.) Independent schools receive their funding through the private sector and through tuition rates, with some government assistance. Independent schools are not part of the national education system, but the quality of instruction and standards are maintained through visits from Her Majesty’s Inspectors of Schools. Parents choose to pay fees in order to send their children to these schools because the quality of education is such that their children have a better chance of getting into good universities and/or getting better jobs when they leave school.

- E Up to age 5, children may have some pre-primary schooling in nursery schools, daycare, or play groups. The government has no obligation to provide such facilities and so many are private enterprise arrangements. However, the state realizes such provision is important, especially now that many mothers work, and so they provide some financial support.
- F Between the ages of 5 and 11, pupils mainly attend state sector primary schools. These schools are called co-educational or mixed schools because they admit both boys and girls.
- G From the age of 11 up to around the age of 19, students attend secondary schools. More than 80% of pupils in secondary schools in England and Wales attend mixed schools; 60% in Northern Ireland; Scotland, nearly all.
- H About 90% of secondary schools are comprehensive schools which admit children without reference to their academic abilities. Such schools provide a general education. Pupils can study everything from academic subjects like literature and sciences, to more practical subjects like cooking and carpentry.
- I Foreign languages are taught as an **integral** part of the National Curriculum, reflecting the importance of Britain's relationship with Europe.
- J Those children who do not attend comprehensive schools attend grammar schools instead. Grammar schools select children, usually at the age of 11, through an examination called "the 11-plus". Those who show academic potential are admitted to the grammar schools where the emphasis is on advanced academic work rather than the more general curriculum of the comprehensive schools. In Northern Ireland the grammar school/non-grammar school division is still common, but throughout the rest of Great Britain grammar schools are becoming increasingly rare.
- K After five years of secondary education, (at about age 16) English, Northern Irish and Welsh students sit their GCSEs exams (General Certificate of Secondary Education). GCSEs are the main means of assessing pupils' progress in their final two years of compulsory education. Based on these results, pupils then decide what avenue of education they would like to follow. They have a number of choices. At the age of 16, they can decide to quit school and find a job; or they can prepare to sit exams for university entrance; or they can concentrate on vocational training. Every 16 and 17 year old is guaranteed a place in full-time education or training.
- L Pupils who hope to attend university carry on their academic study in the sixth form for a further two years and then sit A-levels exams (General Certificate of Education – Advanced). Most pupils try to achieve three or four A-levels in the subjects they are most proficient at. Since admittance to universities depends largely on A-level results, the two years spent in the sixth form are very important and often very stressful for British pupils. Among first year university students getting to know each other, the most common question after "What's your name?" and "Where are you from?" is "What A-levels did you take?"
- M Other pupils who decide not to go to university may choose to take vocational training. The vocational equivalent of A-levels are GNVQs (General National Vocational Qualifications), which provide a broadly based preparation for work or for taking further vocational.

(Source: "The Present Education System" in *The Society and Culture of Major English-Speaking Countries*, Bookman, 2002)

41. In Paragraph A, *compulsory* probably means _____.
(A) comprehensive (B) obligatory (C) complete (D) optional
42. In Paragraph I, *integral* probably means _____.
(A) immigrant (B) essential (C) international (D) redundant
43. _____ receive their funding entirely through government assistance.
(A) private schools (B) independent schools (C) state schools (D) public schools
44. The system of "league tables" shows _____.
(A) which schools are better than others
(B) which schools ask for more tuition
(C) which schools have more examinations
(D) which schools receive less funding from government
45. Which of the following is not true?
(A) The majority of children go to boarding schools.
(B) Good schools tend to be in middle class neighborhood.
(C) The quality of instruction and standards of private schools are supervised.
(D) Children studying in private schools can get better jobs when they leave school.

46. Which of the following is not true?
- (A) 3 year olds can go to nursery schools.
 - (B) 9 year olds study in primary schools.
 - (C) 15 year olds attend secondary schools.
 - (D) None of the above is correct.
47. If a student wants to emphasize on advanced academic work, which school should he or she go to?
- (A) comprehensive school (B) secondary school (C) independent school (D) grammar school
48. The number of _____ in Britain is decreasing.
- (A) grammar schools (B) comprehensive schools (C) state schools (D) technical schools
49. A fifth-grader of a secondary school may decide his or her future grounded on the examination called _____.
- (A) General Certificate of Education – Advanced
 - (B) General Certificate of Secondary Education.
 - (C) the common entrance examination
 - (D) General National Vocational Qualifications
50. Which of the following is not true about the British education system?
- (A) All the state sector primary schools admit both boys and girls.
 - (B) Comprehensive schools provide a general education.
 - (C) The system guarantees students of 16 years old a full-time education or training.
 - (D) The university entrance in Britain is not competitive.