AI in Industries

Standard difficulty · 20 questions · 40 marks · Time: 36 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. AI that helps doctors spot problems in X-ray images is used in:
   (a) communication **(b)** farming only **(c)** transport **(d)** healthcare

2. AI suggesting practice questions at the right level for each learner is used mainly in:
   (a) agriculture only **(b)** communication
   (c) education **(d)** transport

3. What is the main benefit of sorting thousands of forms in minutes?
   (a) helps add trains before crowds build up **(b)** saves time and fuel
   (c) catches faults people might miss **(d)** does repetitive work quickly

4. Which shows AI being used responsibly in an industry?
   (a) patients' data is kept private
   (b) the AI is used without any testing
   (c) mistakes are hidden so no one learns from them
   (d) the AI decides treatment with no one checking

5. A person can pack 70 parcels an hour; an AI-assisted machine can pack 420 an hour. How many hours are saved on 840 parcels by using the machine?
   (a) 11 hours **(b)** 12 hours **(c)** 10 hours **(d)** 2 hours

6. A model is tested on 25 handwritten digits it has never seen. It labels 20 of them correctly. What is its accuracy?
   (a) 75% **(b)** 20% **(c)** 80% **(d)** 85%

7. Before it had an AI camera, a machine packed 350 bottles an hour. With the camera, it packs 700 an hour. By what percentage did the output go up?
   (a) 110% **(b)** 50% **(c)** 350% **(d)** 100%

8. Before an AI checker was used, about 12 of every 100 forms had a mistake that was missed. After it, about 9 of every 100. How many fewer missed mistakes would there be in 900 forms?
   (a) 27 **(b)** 3 **(c)** 108 **(d)** 81

Section B — Short answer — 8 × 2 = 16 marks

9. Give one use of AI in healthcare.

10. Name the sector (healthcare, education, transport or communication): (a) predicting traffic and suggesting routes (b) translating messages between languages

11. Give the main benefit of: (a) automatic captions on videos (b) sorting thousands of forms in minutes

12. A person can sort 60 letters an hour; an AI-assisted machine can sort 180 an hour. How many hours are saved on 540 letters by using the machine?

13. A model is tested on 10 photos of leaves it has never seen. It labels 9 of them correctly. How many does it get wrong?

14. Before it had an AI camera, a machine packed 550 bottles an hour. With the camera, it packs 962.5 an hour. By what percentage did the output go up?

15. Before an AI checker was used, about 13 of every 200 forms had a mistake that was missed. After it, about 4 of every 200. How many fewer missed mistakes would there be in 600 forms?

16. A model is tested on 50 pictures of fruit it has never seen. It labels 46 of them correctly. What is its accuracy?

Section C — Word problems — 4 × 4 = 16 marks

17. Describe one use of AI in each of healthcare, education, transport and communication, and the benefit of each.

18. Match each with its sector: (a) turning a voice message into text (b) warning when a train part needs repair (c) reading textbook pages aloud for learners who need it. Choose from: communication; education; transport.

19. (a) A person can sort 20 letters an hour; an AI-assisted machine can sort 60 an hour. How many hours are saved on 360 letters by using the machine?
(b) Before it had an AI camera, a machine read 450 forms an hour. With the camera, it reads 900 an hour. By what percentage did the output go up?

20. (a) Before an AI checker was used, about 10 of every 200 forms had a mistake that was missed. After it, about 8 of every 200. How many fewer missed mistakes would there be in 1,800 forms?
(b) A model is tested on 100 pictures of fruit it has never seen. It labels 99 of them correctly. What is its accuracy?

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Answer key

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Q	Answer	Working
1	**(d) healthcare**	—
2	**(c) education**	—
3	**(d) does repetitive work quickly**	—
4	**(a) patients' data is kept private**	—
5	**(c) 10 hours**	840 ÷ 70 = 12 hours; 840 ÷ 420 = 2 hours
6	**(c) 80%**	20 ÷ 25 × 100
7	**(d) 100%**	increase 350; 350 ÷ 350 × 100
8	**(a) 27**	(12 − 9) × 900 ÷ 100
9	**e.g. helping doctors spot signs of illness in scans, or reminding patients to take medicine.**	—
10	**(a) transport (b) communication**	—
11	**(a) helps people who cannot hear well (b) does repetitive work quickly**	—
12	**6 hours**	540 ÷ 60 = 9 hours; 540 ÷ 180 = 3 hours
13	**1**	10 − 9
14	**75%**	increase 412.5; 412.5 ÷ 550 × 100
15	**27**	(13 − 4) × 600 ÷ 200
16	**92%**	46 ÷ 50 × 100
17	**Healthcare: reading scans helps find illness early. Education: practice at the right level helps each learner. Transport: route prediction saves time and fuel. Communication: translation helps people talk across languages.**	—
18	**(a) communication (b) transport (c) education**	—
19	**(a) 12 hours; (b) 100%**	(a) 360 ÷ 20 = 18 hours; 360 ÷ 60 = 6 hours; (b) increase 450; 450 ÷ 450 × 100
20	**(a) 18; (b) 99%**	(a) (10 − 8) × 1800 ÷ 200; (b) 99 ÷ 100 × 100